Equipment Research Today and Tomorrow[1]

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Since World War II, we have seen giant strides in the area of food technology. Even though the food service operator is constantly seeking new and better food products, there is hardly one who will not attest to the progress made in this area.

In this same period, the shortage of trained workers in the food service industry has also received considerable attention. Again, we have seen major progress in the efforts to improve the status of the worker. Hours, wages, fringe benefits, and adequate training have come under careful scrutiny in the attempt to attract and keep good workers in the field. The alert operator today no longer refers to training as a problem to be solved quickly and then forgotten; rather, he regards training as an integral and continuing job of management. He recognizes that improving the efficiency of his employees means not only consistently high quality and reduced waste but higher productivity.

Labor cost is directly related to the productivity of the worker, which is also directly related to the quality, efficiency, and availability of tools to perform a given task. Hence, faced with today's high food, labor, maintenance, and repair costs, together with the increasing shortage of skilled workers, the food service operator is taking a long hard look at the efficiency of his operating plant. There is a growing realization by the operator that even the well trained worker cannot function with maximum efficiency in an outmoded layout with obsolete equipment (1). A careful study of today's food service equipment reveals a bit of a paradox. A glance through various professional and trade journals indicates many items offered as new equipment designed to do a better job in food service; yet countless experts in the food service industry say that the equipment in our field is of the horse-and-buggy vintage. Manufacturers of food service equipment admit that the basic concepts of some essential equipment have not changed in fifty years (2). To resolve this paradox, there is need to turn the spotlight on equipment research—past, present, and future.

Research, as defined by Webster, is a diligent and systematic inquiry or investigation into a subject to discover facts or principles. If this definition is applied to work done with the major portion of the food service equipment in the past, it is apparent that the process labeled "equipment research" has in reality been primarily product development. This product development has been most noticeable in two areas: (a) improvement in existing essential equipment, and (b) development of specialized equipment.

Improved Essential Equipment

The improvements in essential equipment should not be taken lightly. Although there has been little or no change in the basic concepts, this equipment has reflected the advances made in industrial technology. Some of the improvements that come to mind immediately are:

(a) Better styling and design.
(b) Use of easier-to-clean, less-corrosive metals.
(c) Increased heat input.
(d) Automatic timers.
(e) Light indicators.
(f) Thermostats.
(g) Rounded corners and the elimination of seams and cracks.

Even this short list sounds impressive. Unfortunately, these improvements have not been applied in all cases where they are indicated and needed. Automatic timers are readily available for steamers and some fryers are so equipped, but rarely do we find an oven with this type of device. Rounded corners and the elimination of cracks and

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seams has become almost standard in the manufacture of tables, sinks, and so on, but these same principles have frequently been ignored in designing food processing machines.

Specialized Equipment

The development of specialized equipment has been responsible for the feeling that there is much new equipment on the market. Specialized equipment can probably be defined as equipment designed to do *one* job well. The impetus for designing such equipment appears to stem from several sources:

(a) Need to overcome deficiencies in present equipment and/or layout. Thus, the high-speed counter-type griddle placed at the point of service tends to alleviate two problems: the slower cooking of old conventional units and transportation of the food to the service area.

(b) Need not only to cook but also to merchandise a given food product. This would include most of the infra-red equipment on the market today. The trend toward more showmanship and better merchandising has made this increasingly important.

(c) Need to substitute mechanical skill for human skill to save labor and decrease worker fatigue. The best examples of this type of equipment are: the chopping, dicing, slicing machine; the pie crust roller; and the dough divider and shaper.

Equipment Testing

Product development of food service equipment resulted in another function which in most instances has also been called equipment research. This was the function of testing the equipment that was developed. Testing of equipment was carried out first and most frequently by the manufacturer; later testing was undertaken by trade associations and university research laboratories.

The purpose of testing has been threefold:

(a) To determine if the manufacturer's claim of performance was accurate.

(b) To compare different models or brand names of the same equipment to determine which gave the best performance.

(c) To detect failures in performance, to suggest, and/or make improvements.

The value of product testing by the manufacturer should not be underestimated. It is a necessary part of product development, but the value of such testing in a university research laboratory is questionable. While it is possible to achieve the three purposes mentioned, the facts usually cannot be published without violating the policies of the university.

New Trends Since 1950

This then is the picture of the past. Equipment research as we see it today actually started several years ago. In all American industry, the year 1950 stands out as a peak profit year. Since that time, the level of sales has generally continued to rise, but net profits have slowly declined. This "squeeze on profits" has resulted in some interesting trends in food service equipment. These trends do not represent dramatic changes in equipment design, but rather minor changes that make it possible to increase the productivity of the worker.

Carts for the transportation of supplies and dishes are not particularly new in the food service operation. What *is* new is the trend to make most of the equipment normally used in the kitchen portable. In the past, much time went into planning the placement of equipment where it would be the most expedient for the major portion of time. Probably every food service operator has, at one time or another, said, "I wish this equipment was portable so I could rearrange it to meet a specific problem." That is just what the new mobility does for us. Starting with the scales in the receiving area and going through to the service area, all types of receiving, preparation, production, holding, and service equipment are being put on wheels (3). Mobility of equipment has increased the attention given to modular design (4).

Another trend is the walk-in refrigerator with the self-contained compressor unit. No longer is there any need to have an unsightly compressor on or near the box or to provide a special compressor room for refrigeration units. The problem of obtaining experienced service men and/or the high cost of such labor has caused the food service operator many headaches in the past, and the future outlook is even dimmer. The manufacturer has attempted to solve this problem by producing equipment with a self-contained unit. If a breakdown does occur, a substitute unit is installed while the original unit goes back to the factory for repair.

The use of glass or plastic doors is another innovation on refrigerators. The advantages are:

(a) Light weight. This allows quicker and easier openings, especially for women employees.

(b) See-through. This saves time and results in better housekeeping, since the contents of the box are always visible. It also eliminates the danger of anyone being locked in the refrigerator.

There is some loss of refrigeration in using the lighter plastic or glass doors; however, most designers feel that since doors are easier to handle, there is less tendency on the part of employees to leave the door open. Warping of the plastic doors, due to high humidity, has created some problems, and for this reason the plastic doors are not used in some areas. Some designers are using stainless steel corners and braces to overcome warping. Others partially solve the problem by designing the plastic doors in two parts.

The mixer is coming in for its share of improvement. A more streamlined design of the motor housing not only gives improved appearance but makes cleaning easier. Some mixers feature push-button controls to do away with the old-fashioned clutch. Bowls may be raised or lowered by the foot rather than by hand, thereby allowing the operator to use both hands in handling materials. Bowl-raising motors are available for the 80-qt. bowl and in some cases they can be used for the 30- and 60-qt. bowls.

These are only a few of the developments currently being used to meet the challenge of increasing labor cost.

Future Equipment Research

What about the future? Certain factors already evident in our economy will undoubtedly influence the direction equipment research will take:

(a) Higher capital investment. It costs more to construct, equip, and operate food facilities now than ever before; yet investors agree that there must be some proper balance between investment and services rendered or profit if the venture is to be economically sound.

(b) Shortage of skilled labor. At a recent meeting of the National Electrical Manufacturers Association, A. C. Monteith pointed out that while the demand for goods and services is expected to increase by 40 per cent by 1963, the labor force will increase only 13 per cent (5). We are warned that should the productivity of the worker remain at 1958 levels, we will face a shortage of 4 million workers by 1965. The food service industry has already experienced much difficulty in competing in the labor market. These figures would indicate that the future will bring increasing competition for employees.

(c) Higher labor cost. Competition for labor at all levels has resulted in spiralling wages and more fringe benefits. There is every indication that this will continue; thus higher labor costs are self-evident unless the productivity of the worker can be improved.

Space Design

Specialized equipment designed to do one job well has in the past been the answer to the inadequacies of our essential equipment. At the same time, it has been recognized that this type of equipment increases the space requirement. Space costs money. Equally important is the consideration of the cost of the equipment that occupies that space and the cost of operating and maintaining that equipment.

The term "kitchen layout" has long been a familiar one. In the future we will probably hear more frequently the term "space design." Since space has become so valuable, it will be necessary to think in terms of using vertical as well as horizontal space in the most effective manner. Equipment research will play an important role in helping to reduce space requirements. All of this suggests that further research and development will attempt to find ways to combine, consolidate, and make equipment multifunctional (6). One such study is under way now in the Food Service Industry Research Laboratory at Michigan State University. A pressure vessel, approximately 22 by 22 in., is being built which can be operated from 25 to 26 in. of vacuum to 15 lb. pressure. Auxiliary attachments will make it possible to introduce steam, vacuum, or compressed air into the chamber. The vessel has available an electric heating element and a fan to provide forced air convection. This vessel can be operated using the conventional hot air medium, hot compressed air, or a saturated atmosphere. Any one of these mediums can be used with or without forced air convection. The purpose of this vessel is to investigate the influence of each of these factors or a combination of these factors on quality, shrinkage loss, cooking time, and fuel consumption.

Adapting Equipment from Other Industries

Another important phase of future research will be the investigation of equipment already successfully used in other industries to determine if that equipment has any practical application in the food service field. An example of such equipment already on the market and apparently well received is the cold water glass washer. Infra-red cookery is another example.

To date, infra-red cooking equipment has been used primarily for showmanship in the dining room. In a current investigation an attempt is being made to learn whether this energy can be harnessed for heavy production work in the kitchen. The principle of infra-red is the transformation of electromagnetic energy to radiation heat. We know it is used successfully in the automobile industry to bake paint on car bodies. Can this same principle be applied to cookery? This study will involve the investigation of the entire infra-red spectrum to determine if any one part of the spectrum is best suited for cooking and how it could best be utilized in the food service kitchen.

The Problems of Temperature

A necessary part of any research program in the future will be the constant effort to improve existing essential equipment. Most urgently needed right now are precision instruments which will control time and temperature of heat transfer in all types of cooking equipment. Much has been done in this area but much still remains. Preliminary investigation last year with an air-agitated oven indicated that it might be possible to cut down fuel consump-

tion considerably, at the same time reducing to a minimum the inside temperature variation now commonly found in ovens.

A long-term study in the area of defrosting meat is in progress. The objective is to find the best method of defrosting meat quickly, safely, and to get it cooked without losing the built-in high quality. Since the trend toward using more and more frozen precooked food is evident, it is hoped that this study may lead to information which will make possible more efficient handling of all frozen foods. A study of defrosting meat in moving air was undertaken last fall. A wind tunnel, with a special cabinet for the sample, was constructed. A motor with a fan was attached. In the initial study, the rate of defrosting was recorded according to various air velocities at room temperature (71°F.) and 10° above room temperature. It was determined that the optimum air velocity was between 4½ to 5 mi. an hour. Further testing will be done to establish the optimum humidity, and the optimum temperature between room temperature and 35°F. which will give the best quality product in the minimum amount of time. It is hoped that when these factors are determined, an inexpensive defrosting unit may be designed or that this information may prove helpful to refrigeration manufacturers in designing a box with a fan that would give optimum air for velocity for safe, quick defrosting.

Along with this study of air velocities, will be the investigation of the potentials and limitations of microwave, forced-air convection and infra-red in their relation to defrosting and reconstitution of frozen food products.

Finally, one of the important roles of the researcher in equipment in the future will be to determine when and what present-day equipment is no longer required in the food service operation. Research is always expensive, not only in money but in time and human resources. If full value is to be received from the research investment, there must be a continuous evaluation of the functions still being performed in the food service kitchen relative to the advancements made in food technology. Certainly it would be hindsight to spend research effort on equipment such as vegetable peeling machines that many operations currently are not using and that are now frequently being omitted from new installations.

Limitations of Research

No discussion of this type would be complete without mentioning what research *cannot* do for the food service industry. It cannot:

(a) Make the food service operator select the right equipment for the job.

(b) Make the operator use that machine to its full potential.

(c) Guarantee that the machine will perform efficiently without proper care and maintenance.

(d) Determine all the necessary improvements and new equipment that the operator will need in the future.

(e) Assure that food service operators are going to be willing to pay for these improvements.

Use of Present Equipment

We have spent much time thinking and talking about "what's wrong with food service equipment." But how much time and thought have we expended to assure ourselves that the equipment we have is being used to best advantage? How long has it been since you have walked through your kitchen and observed how much of the labor-saving equipment is standing idle? If you haven't done this recently, it might prove revealing. Do your cooks prefer to use a French knife instead of the labor-saving slicer or chopper? Why? It may be because the end product is not satisfactory; or, is it because the worker just does not know the full complement of jobs that can be done on one machine? Perhaps it is because the blades are dull or the machine doesn't function properly. Another very frequent complaint is that the machine is so far away it takes longer to get to the machine than to do the job by hand.

In most kitchens there is usually a long-standing rule: the person who uses the machine must clean it. Thus the cook who has a 5-min. chopping job spends 15 min. cleaning the machine. No wonder he would rather use a knife. The cook can probably chop that amount by hand in less time; furthermore, he can do it in the unit and keep his eye on other items under production.

Obviously we cannot afford to hire a special clean-up crew to follow the cook around. But why should we have a cook chop celery, clean the machine, then have a salad woman chop celery, clean the machine, and so on? Couldn't one person be assigned this job and told how many pounds or quarts to chop of a certain size? The machine could be cleaned at the end of the entire operation. This is not a new idea. It has been used successfully in many of our large commercial operations in their central commissaries. Is there any reason why we cannot adopt a similar plan to a single unit operation, even though the quantity produced may be small? It has a great potential in saving labor on the part of our most costly personnel; furthermore, it means we would receive greatest value from our labor-saving machines.

Management's Responsibilities

Labor-saving equipment cannot save labor unless it is used and used to its fullest capacity. This means that management must do more than just buy the best equipment available. Management has other

responsibilities, such as: (a) Placing that equipment where it will be most convenient to do the job, then training the worker to use the machine to its fullest capacity. This means that someone on your staff is going to have to find out the full potential of the machine. (b) Keeping the machine in good operating condition. This means that we must be aware of possible points of failures and have some knowledge of what is necessary in the way of preventive maintenance. (c) Making sure that production is scheduled so that the machine will give the greatest amount of productivity with the minimum amount of waiting, walking, and clean-up labor.

Earlier we mentioned the trend toward mobility in food service equipment. There is every indication that we have all jumped on the mobility band wagon. Why not? The idea is sound. But is it sound for *your* operation? *You* are the one who must determine if you have adequate aisle space with good turn radii at all corners. You must determine if the floor levels will allow this equipment to be moved easily. Certainly placement of electrical outlets and door openings must be considered. One thing that is seldom considered by the equipment designer but which becomes a major consideration to the operator is whether the portable equipment can be moved by the employees—especially women.

Our Contributions to Research

For the most part, the equipment manufacturer is making an honest effort to give us equipment that will do a better job. He cannot do it alone. In most instances, the equipment is sound from an engineer's point of view. The manufacturer doesn't understand why we are not happy with the performance. He seldom sees the results; in many cases he does not understand the jobs we are trying to perform and the basic cookery principles involved in turning out a successful product. *We* see the end result day after day. Too often we accept inconsistent performance as inevitable. Our contribution to research should be more careful observation of the results obtained under varying conditions. Much more curiosity as to why the finished product is that way, a little imagination as to how it could be improved, and much better communications with the manufacturers and the research laboratories about these results are needed. As you read about the delicate and intricate mechanisms needed to put a satellite into orbit, don't you wonder why we still put up with thermostats that show a variance of 100°? Certainly it isn't the lack of know-how on the part of our industrial economy; rather, it would seem to be the resigned attitude on the part of the food service industry.

Equipment manufacturers tell us that reliable precision controls are available today, but so far they have not found the food service industry willing to pay the difference for improved performance. To stay in business, the manufacturers must remain competitive. Unfortunately, the more precise control does not look any different than the less accurate one. For a long time dietitians have known the ultimate value of buying food on the basis of quality and yield rather than price. Why not equipment? All of us are aware that there is waste in our kitchens every day, due to poor performance on the part of our equipment. The problem is that we have never put a price tag on that waste. If we had such figures, it wouldn't take long to convince ourselves and our administrators that buying equipment by price was a pretty expensive proposition.

In 1956 Fern Gleiser asked dietitians this question (7): "Is the day coming when we will have a management research dietitian on the staff of the hospital, just as we have the administrative, the clinic, and the therapeutic dietitian today?" In my opinion, the need for such a person is here today if we are to derive full benefit from our research investment in the future.

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Antibiotics to Keep Fish Fresh

In April, the Food and Drug Administration authorized the use of chlortetracycline on fresh-caught, whole, headed, and gutted fish, shucked scallops, and unpeeled shrimp. Five p.p.m. is the maximum amount that may legally remain on fresh-caught, unprocessed food. Commercial fishermen will use the antibiotic as a dip or in the ice. It may not be used in place of adequate refrigeration, and thoroughly clean conditions aboard fishing boats will still be required. The antibiotic may not be used on processed seafood products, including fish cuts, steaks, fillets, peeled shrimp, and shucked oysters.

An Architect Re-Evaluates Food Service Systems[1]

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OFTEN THE architect is given the responsibility for designing places where food is prepared and the arrangement of equipment for food service. Sometimes he is called on to outline and develop the systems by which the food service preparation and serving will be accomplished. He approaches this role as a builder, for such is his way of working. Usually the result is workmanlike, equipment well enough arranged in the current mode. From my observation, the "food service consultant," if other than the architect, works in much the same way. I do not depreciate this way of working, but suggest that more information is needed.

Importance of Management

Equipment arrangement is important; so, also, is the construction and layout of building spaces within which food is served. However, new emphasis should be placed on the fact that food service systems are essentially management problems and not physical plant or architectural problems. Most food service systems fall short in the same way. Many are workably arranged and can serve good food, but they were planned by someone who lacked full facts as to exactly what is done in the places of work and for how much time. Often arrangements continue for the life of a building with the facts of work-process never defined. "Work-process" is something more complete than the "lines of flow" which are usually shown on kitchen layout drawings. Work-process is the full description in terms of time, action, and dimension of a work and management arrangement, plus a logical justification that the way work is being done is, in fact, the best way. We do not now have such meaningful real information about the food service industry. As a result of this lack, it is not possible to feed back accurate and useful instructions and thereby achieve management effectiveness. Neither, and I put this secondary, is it possible to properly design food service areas; instead, we make approximations.

Only management can make the arrangements to assemble the information needed in anything like the volume necessary.

Last year at the American Hospital Association convention in Chicago, three papers were presented in which the components of food service labor cost in three large hospitals were analyzed in the categories of cost of preparation, cost for serving, and cost for administration. These figures were relatively crude statistics for three institutions showing the labor-minutes per meals—for preparation, serving, and administration of patient meals—but some of the first available. Not surprisingly labor requirements per meal were, respectively, about 4 min. for preparation, between 15 and 20 min. for serving, and 3 to 5 min. for administration. Other data, also pretty much unrefined, have been published in this JOURNAL (1-4).

No doubt, such data have been independently analyzed many times in single institutions or commercial cocnerns, but there is no reliable source or clearing house for statistical information on the management problems which occur in the food service industry. Hence, it is reassuring to have even these figures, meager as they are. This is some of the kind of information needed to plan new systems intelligently or to evaluate and operate those already in existence.

Mechanization and Systematization

There was a day when no one talked "systems" for food service, and in that day no more than nominal administrative direction in the food service industry was required. This is not to say that the administrative function went unfulfilled. The man in charge managed a one-man direction of all that was within his scope. Now, however, if we are to talk of "food service systems," and apply them and make them work, it must be realized that these systems are essentially based on management personnel and their organization, and that for every operation that is removed from the realm of unsystematized production and set up on an organized basis, full and detailed responsibility must be assumed by a

[1]Adapted from a presentation given at the 41st Annual Meeting of The American Dietetic Association in Philadelphia, on October 24, 1958.

management person in knowledgeable authority. In short, more management staffing will be required—because there will be more management work to do.

In detailing an explanation of food service systems, I like to make a distinction between food service "systematization" and "mechanization."

In food preparation, canning, baking, and processing of various sorts, mechanization is familiar. The businesses of meat purveyors, the great commissary-serviced restaurant chains, and bakery operations have been built on mechanization.

Food service, however, involves another kind of work. In hospitals, there is the time-consuming preparation and serving of patients' trays, at 15 to 20 min. of man-time each. In restaurants, there is the work of placing the patron's food before him at a cost of 50 per cent of his check. In these two instances, there is almost no mechanization as such, although there is dependence on "systems" and "management."

Until very recently, hospital food service systems were always considered either centralized or decentralized. This division is growing less specific; it has come to be realized that in all modern hospitals, it is necessary for control purposes to centralize the management of the patient's menu. If a definition is applied, it becomes one of whether all food is served from a single kitchen or from a number of carts or unit kitchens. There is evidence that a good job can be done either way—by decentralized cart service or by centralized serving kitchens.

Central Service Arrangements

The general acceptance, perhaps the general tendency at the present time, is in favor of central service, and this is the area where some interesting examples of new equipment and systems exist.

In support of this tendency for central food service, there have been made what sometimes appear to be extravagant claims. It has been claimed that central food service systems cost less for original investment; cost less to maintain; provide a better control over waste; and have a degree of supervision which is lacking from decentralized or divided systems. All of the above are true.

When one talks costs of operation, however, it is not entirely shown that the balance lies in favor of central food service. It must be remembered that often unlike things are compared and that decentralized service, though cheaper in labor, makes up in loss through waste and cost of maintenance of equipment and kitchen spaces throughout a hospital.

ARRANGING CENTRAL SERVICE

In the approach to central systems, there are those who believe that all of the preparation operations and all of the arrangements for getting food onto all of the trays should be provided within one kitchen. The best development, this group maintains, will be provided in a room where the whole food operation can be viewed from a single supervisory place. It is also best that the food service operation be provided (if a multi-story hospital is involved) with separate vertical transportation reserved exclusively for delivery trays at the critical meal time.

There are those who recommend, without hesitation, that all of the food service operation be delegated to people within the single organization of dietary personnel. Dietary people will have to answer the objection from the nursing profession that this involves undesirable contact of dietary personnel with patients. It must be fully accepted that dietary personnel can be instructed and supervised in any such patient contact, on the same basis as nurses' aides are instructed for tasks that are no more exacting.

TRANSPORTATION OF FOOD

Nearest the hospital administrator's heart is the subject of "hot food." To satisfy this requirement, he often decides to use heated, refrigerated, or insulated food-holding equipment. One can understand the basis for making this easy, popular decision. The carts are often beautifully designed and functional from a refrigerating, heat-containing, food-holding, food-serving, and tray-assembly standpoint.

First things should come first, however. No matter how good the device, most food is not improved by holding. In the design of new systems for new institutions or for remodeled institutions, it is wise to seek first a direct course of preparing and serving food to patients in the least possible time. Limits for delivering served trays should be set at less than 10 min. and the design average never be more than 7 min. from the start of tray-assembly to tray-delivery to a patient's room. These conditions are obtainable in most cases. If they are not or cannot be met, it is then time to seek the appurtenances and appliances which are designed to keep hot food hot, and cold food cold, in transit, and to accept the necessary additional cost to assemble trays on floors or in corridors adjacent to patients' rooms.

For many years dumbwaiters or subveyors (now also trayveyors) have been considered the standard vertical tray transport equipment. These appliances have their place, but I do not think that major multistory hospitals should depend on this kind of vertical transport for central patient food tray service. In most cases, a dumbwaiter or a subveyor still requires a cart to transfer the tray to the patient. It is better to put the trays directly onto the cart

in the kitchen, transport them to the patients' floor by elevators especially designed and assigned to dietary service, and deliver them to the patient's room from the same cart. Certainly the time required is shorter. Most up-to-date observations indicate that, with proper elevator equipment, a full round-trip elevator cycle for cart delivery is ½ to ¾ min.

It must be stated, in qualification, that the subveyor has application in situations where there is a short vertical run from one to two floors. There is a unique application in a hospital in Chicago, where a serving kitchen was located on the fifth floor to serve the sixth, fifth, and fourth floors by subveyor. That kitchen installed some ten years ago is serving about 300 patients per meal.

MAXIMUM SIZE FOR AN ASSEMBLY LINE

This service required, when installed, and still requires, about an hour to complete the 300 trays. This is a tray-serving rate of about 5 per minute. A more modern tray-serving line at St. Francis Hospital in Milwaukee serves 160 trays in about 20 min. of ordinary meal service, or at a rate of about 8 trays per minute. It is not known whether any other hospital serves faster. The indications are now that a 300-tray line should be able to serve its complement in about 40 min. Such a conveyor line for a new hospital is now in the process of design. There may be prototypes operating at this speed, but I do not know of them.

Tray assembly lines have been considered as production lines. Some years ago, it was thought we should rely on a "paced" conveyor belt to set the rate that tray assembly should proceed and thus enforce the speed at which trays had to be produced down the line. This thinking now is attributed to a somewhat over-enthusiastic and over-literal interpretation of scientific management texts. Actually, serving lines are such intimately controlled and functioning arrangements that the question of "pacing" them is not real. The problem is to distribute the work evenly so that everyone has the same amount to do and can work at the same rate, and to organize each task so that errors are unlikely.

THE IDEAL—A COMPLETE TRAY

Those who have considered the organization of tray assembly lines in principle have felt that any line should be able to assemble a complete tray, working from a pre-scheduled menu; that the complete tray should include any modified diets, as a part of the regular function of a line; that, in fact, all diets should be considered as modified diets; and that the complete tray should, if possible, include the arrangement of both the hot and cold foods in the manner that it will be presented to the patient.

Central kitchen tray service arrangements usually have been of the conveyor-belt type. One of the first installations was at Chicago Wesley Memorial Hospital; another, about ten years ago, was at Michael Reese Hospital, also in Chicago. These and many other examples have been described in periodical literature and they have served their function relatively well. A period of refinement has gone on, and some of the newer jobs are accomplishing the same objectives with less complicated equipment, some even eliminating the moving belt. One of the most remarkable of the new installations is at St. Francis Hospital, Milwaukee.

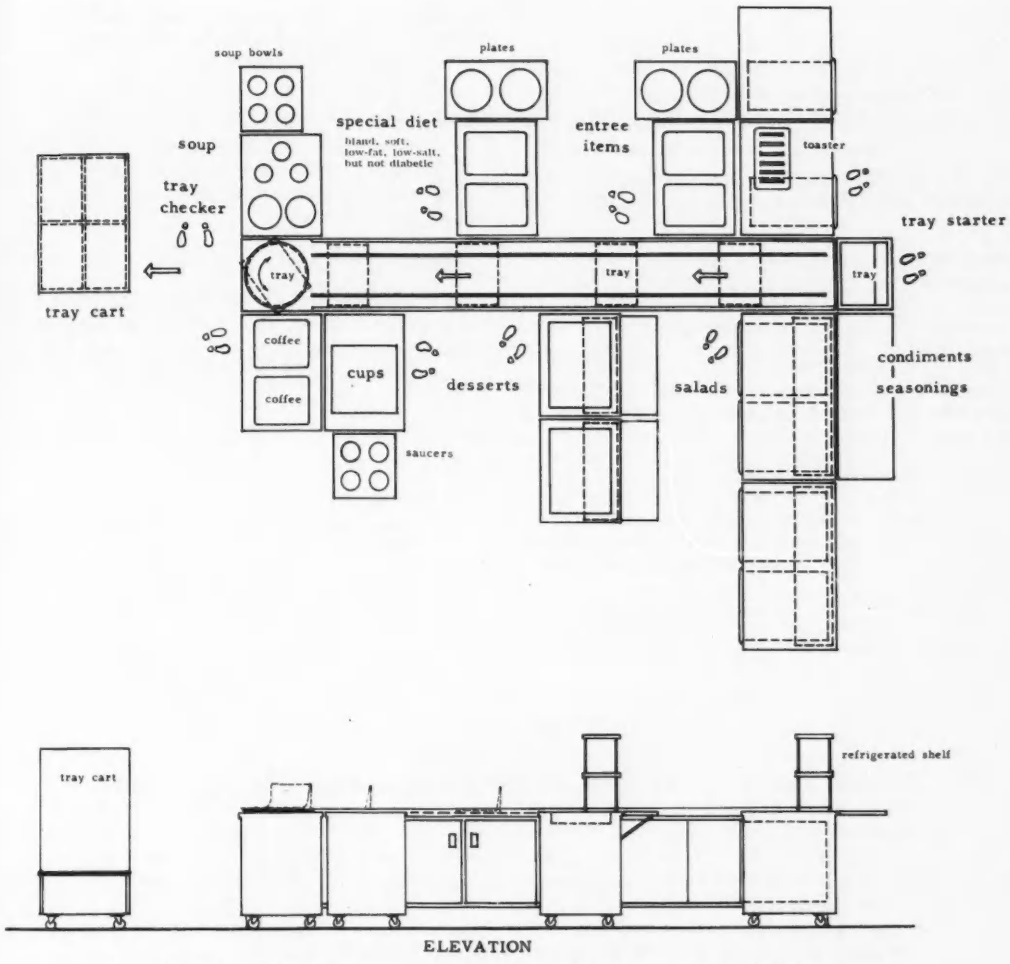
Tray assembly line at St. Francis Hospital in action. Note that it is made up entirely of mobile units and that trays are moved by hand along the assembly line.

St. Francis Hospital's Central Service

Recently, an observation study was made of the kitchen at St. Francis Hospital. The following is a schedule of the way a typical noon meal service works. At 11 o'clock in the morning, everything was in readiness to serve the noon meal. At 11:05, the trays began to move and for 20 min. they were served one after another, without a pause and with scarcely an error. They were neatly and quietly slid into 10-tray carts and moved by special elevators to the hospital floors. By 11:25, 170 trays had been prepared for 170 patients, including all of the modified diets and they were all on their way. Within 5 min. more, all were served to patients in their rooms. Less than an hour later, all of the trays were back and most of the dishes washed.

This service works very well as a whole. There is complete concentration on the part of those engaged. The lengthy, laborious preparation required to achieve this on the part of those who planned ahead is perfectly evident.

This kind of service is exciting, not only for the observer, but for every person involved. Why should this particular kitchen operate so much better than others planned along much the same lines? Chief among those reasons was found to be the full knowledge on the part of those in charge that every detail *must* be thought of and provided for in advance.



Floor plan showing tray assembly line at St. Francis Hospital, Milwaukee

However, the planning and building of equipment at St. Francis has not been as direct a procedure as the operation now appears. A fortuitous change in concept occurred at one point in the original planning. The original concept of the serving line sought a very different arrangement, but the designer of the equipment had the wisdom to introduce a method of construction whereby every service item is movable on wheels. It was therefore possible for the dietitian to rearrange the equipment to suit her concept of the service operation of the kitchen, which appears to be adequate for this present work done at St. Francis Hospital. Others may find other and better arrangements to suit their particular administrative judgment as to the matter of managing the production. In the way the equipment units were built, there are many admirable and beautiful details and arrangements for cleaning the special function accommodations. It is obvious that many people contributed to the design of the St. Francis service.[2]

Unfortunately, the St. Francis system (a fine example) is not a satisfactory arrangement for any or all hospital central-service set-up lines. Were it so, how that would simplify architect's problems! How wonderfully easy it would be for the architect to give the right definitive answer every time. But we all know better.

Future Progress

For the future, as we learn more about how the systems we have operate, progress may well be made in "systems" organization.

[2]The head of the dietary department at St. Francis Hospital is Sister Mary Emeldine. The administrator, Sister Lelios, gave a great deal of attention to the design of the kitchen. Equipment was built by H. L. Kiefer Company, Milwaukee. The author is indebted to all of these for their patient and careful explanations.

The daily charting of menus is a familiar routine. To see how some fairly ordinary business machines could improve this function, let us assume, for example, a hospital which has mechanized its billing procedure, its inventory, and its medical statistics. No one hospital has yet gone this far in mechanizing its records and statistics control, but the beginnings are apparent. The following would be a hypothetical routine:

After the dietitian has made her rounds for patient menu selection, the menus are posted to a small version of a billing machine. A special totalizer is required. A patient identification number is entered, and all of the selections are posted in the proper column. As each menu is completed, it is recorded on punch tape. When all have been posted, the punch tape is entered for "available time" on the hospital's file computer; in a few minutes, this time is available. All of the menus are then referred to the patient's master punch card, for checking and recording of diet, and for output back to the dietary department of another punch tape which will write out each patient's tray menu card in beautiful form on a tape-actuated typewriter.

In the meantime, the computer has stored and adjusted inventory, referred to master menus, set up storeroom-to-kitchen food delivery schedules and posted recipe quantities for the cook's use.

A day later, the computer will produce a production control report working back from the dietitian's serving line check station information as to the accuracy of tray-assembly.

The above is not fantastic; every operation is being done as a matter of routine on a large scale at some place in business or industry. It is an example of procedure that is inevitable in the process of applying "systems" organization to food service.

Summary

All architects and food service equipment designers are dependent on the information obtained from those in control of the production of food service. This is the foundation information the architect needs, if he is to assist effectively when designing the places in which food is produced and served.

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New Opportunity for Graduate Study in Dietetics

In 1959-60, the University of Kansas Medical Center will offer for hospital dietitians a new program of graduate study leading to a Master of Science degree. The course will be open to college graduates who have met the A.D.A. academic requirements and to qualified dietitians who have previously completed an approved internship. To qualify for the degree, students will be expected to meet the Graduate School and departmental requirements of 30 credit hours, including course work and thesis.

Specialized practical experience in the Department of Dietetics will be planned for these students, but it will be optional and will not be offered for credit. Courses will also be open to those who do not wish to work toward the degree but desire advanced work in particular areas.

The program will require eighteen months for completion. Approximately five months will be spent in general internship experience before a student selects an area of specialization. This will be followed by a full semester of course work on the Lawrence, Kansas, campus, after which the student will return to the Medical Center. The final eight-month training period will complete the course, during which the student will prepare a thesis and have specialized internship experience in her chosen major area.

Students will be allowed to choose between two areas of specialization: (a) hospital dietary administration and (b) dietetics and nutrition.

The following courses at the Medical Center will be required of all *administrative* majors: the physical plant, organization and management, and cases studies in human relations. Recommended courses will include: seminar in food technology, management of small business, environmental sanitation, and principles and techniques of guidance.

Students majoring in *dietetics and nutrition* will be required to take courses in: medical science for dietetic students, evaluation of nutritional status, and case studies in human relations. Recommended courses will be: seminar in nutrition, seminar in food technology, curriculum development and other education sources, and somatopsychology.

Further information about this new graduate program may be obtained from: Department of Dietetics and Nutrition, University of Kansas Medical Center, Kansas City, Kansas.

Dietary Check Sheet to Aid Administrators

JOHN T. FOSTER[1]
and JANE HARTMAN[2]

WHAT TOOLS can the administrator use to evaluate his dietary department? Any number of excellent reference materials are available to supplement the administrator's knowledge of food and food service. Patients' opinions form another criterion. Easier than these and still more comprehensive, however, is the dietary check list. From Connecticut comes the accompanying check sheet, which has been designed to meet not only the special needs of dietary consultants, but is also suitable for the administrator's needs as well.

This "Check Sheet for Continuing Dietary Consultation" was adapted from the check list included in the Special Association Report published in this JOURNAL in October 1956 (1), in recognition of the growing role of dietary consultation in an increasing number of states. Some states are including such consultation as part of state hospital licensure programs.

In Connecticut, such a service has been in effect since September 1956 under the sponsorship of the Connecticut Hospital Association as a service to its thirty-three short-term voluntary hospitals. The first state hospital association to undertake such a service to its members, this project has been supported by a Public Health Service grant. It has served to demonstrate that the third-party professional viewpoint can be valuable. The project has, from the outset, also highlighted the need for standard criteria by which hospital dietary departments could be evaluated.

For one thing, the food service specialist began her consultations with an automatic "clientele" of thirty-three hospitals of varying standards and sizes (ranging from 38 beds to as many as 780). Obviously, a broad frame of reference was needed. The specialist was expected to demonstrate improvement in three areas: dietary administration, diet therapy, and dietetic education. Therefore, a set of criteria that would reflect such improvement was vitally important. Before change could be measured, a baseline survey was required.

The A.D.A. Check Sheet

With these needs in mind, therefore, the specialist and her sponsors finally decided to try the then new "Check Sheet for the Hospital Department of Dietetics" (1). This check sheet, which was the result of a two-year study by a special committee of The American Dietetic Association, formulated a pattern which could be used in evaluating a hospital department of dietetics. It was *not*, it should be emphasized, designed as a consultation check sheet; rather it was presented as a simple evaluation device that might eventually meet the needs of the Joint Commission on Accreditation of Hospitals in its periodic evaluations of hospitals.

This distinction is sufficiently fine that it is doubtful whether it could have been appreciated except as a result of a pragmatic trial such as that provided by the first eighteen months of the Connecticut project. Certainly, at the outset in Connecticut it appeared to be a very adequate tool; also, it provided a useful beginning for that project. Experience, however, did demonstrate that a continuing consultation service presents special needs. The experience in Connecticut with the earlier check sheet has been extensive. It was used in 1956 by the food service specialist to evaluate each of the thirty-three hospitals. It was used again early in 1958 for a re-survey of all these hospitals as part of an interim evaluation of the project undertaken by a student in hospital administration at Yale University. During the intervening months, the check sheet provided a continuing frame of reference for both the specialist and the administrators and dietitians she was serving.

The Connecticut Check Sheet

Nevertheless, the trial demonstrated special needs. For one, there was a need to regroup criteria under headings that were semantically meaningful to hospital administrators. The new check sheet developed in Connecticut thus groups questions into the following categories: staffing, management policies, facilities, sanitary practices, therapeutic functions, and food service standards. Another need in the continuing type of consultation was for some simple system of *relative* scoring as contrasted to the

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Connecticut Check Sheet for Continuing Dietary Consultation to Hospitals

	RATING		
	Plus	Average	Minus
A. Staffing of dietary department			
1. Qualification of head of department Name_____ Formal qualification (A.D.A. eligible? Other academic background?) _____ Experience_____ _____ Comments_____			
2. Qualification of dietary staff			
a. Number of qualified dietitians_____			
b. Number of food service supervisors_____			
c. Comments_____			
3. Effectiveness of dietary workers			
a. Number of workers_____			
b. Comments_____			
4. Adequacy of clerical employees			
5. In-service dietary and safety training			
6. Is professional growth of professional staff encouraged?			
7. Relative stability of dietary work force			
B. Management policies			
1. Does the dietitian meet at least weekly with the administrator?			
2. Are dietary department conferences held at least weekly?			
3. Are all funds for dietary expenses budgeted?			
4. Is the dietary department subject to a man-hours budget?			
5. Is standardized food cost accounting used?			
6. Are food and equipment purchased according to specifications?			
7. Does the purchasing system take advantage of competitive prices?			
8. Is there a perpetual inventory of foods and supplies?			
9. Is a record kept of the cost of maintaining equipment?			
10. Is raw food expense ($_____ per meal) reasonable? Comments_____			
11. Is expense for salary and wages ($_____ per meal) reasonable? Comments_____			

"yes" and "no" approach of the earlier form. Other considerations can best be understood within the framework of the various sections of the Connecticut check sheet.

STAFFING

To re-phrase a truism, "good food service does not just happen"; it results from the efforts of adequate numbers of effective people. Thus the quality and the quantity of assigned personnel are of basic concern to the dietary consultant as well as to the hospital administrator. The Connecticut check sheet recognizes these criteria for not only the staff leadership but also the dietary subordinates. Although the Joint Commission on Accreditation of Hospitals has recently re-stated (2) its belief in the desirability of direction of the department by American Dietetic Association-qualified dietitians, the form allows for the inclusion of experience equivalents, since it will be many years before all hospitals can be expected to attain such a goal. The importance of ancillary workers, such as food service supervisors and dietary clerks, is recognized, as is the issue of "professional growth"—as important to the professional dietitian as it is to administrators and other members of the hospital team.

MANAGEMENT POLICIES

The increasing attention being given to the continued rise of hospital costs makes it inevitable that the efficiency, economy, and effectiveness of administrative systems of so costly a hospital department as that of food service be subject to continuing scrutiny. Effective communication between the administrator and the director of dietetics is essential. No longer can expediency be the excuse for failing to use the budget as a basic management control. Personnel practices are just as important in the dietary department as elsewhere. These and other concerns reflected in the check sheet questions are managerial issues that any administrator can quickly accept, regardless of his specific knowledge of dietetics.

FACILITIES

It is just possible that Grand-

mother's earthenware jar made "the best baked beans ever cooked," but present-day quantity cookery and sanitary standards demand efficient production that can only come from modern equipment, properly arranged. Even the poorest kitchen equipment is expensive (sometimes more expensive than the best), and the high initial cost of equipment demands the further consideration of systematic maintenance, both preventive and corrective, to insure maximum efficiency and life.

SANITARY PRACTICES

The increasing concern over outbreaks in hospitals due to *Staphylococcus aureus*, coupled with the ever-present threat of food contamination, makes sanitation another vital aspect of dietary administration. The fact that too many states or communities still do not provide or enforce adequate sanitary codes makes it all the more important that food storage, preparation, and distribution and waste and garbage disposal be subject to continuing scrutiny. Both medical standards and public relations are threatened when carelessness is permitted (3).

THERAPEUTIC FUNCTIONS

Most frequently associated with the word "dietetics," the therapeutic function of the dietary department involves more than meeting basic nutritional requirements. A diet manual is one accepted device, but a manual must constantly be kept current as new findings occur (4-7) and—no matter how current—serves little purpose unless fully understood and used by the nursing and medical staffs. Individual food preferences and local food habits should be considered in planning modified diets to meet therapeutic requirements. Another essential function is dietary instruction of patients, and, while printed diet sheets are usually better than none, the instruction must be individualized to the personal needs of each patient, if it is to be effective (8-10).

FOOD SERVICE STANDARDS

Just as good public relations have an accepted dollar and cents value

Connecticut Check Sheet for Continuing Dietary Consultation to Hospitals, Continued

	RATING		
	Plus	Average	Minus
12. Is there formal orientation of new employees?			
13. Is there a written plan of organization of the dietary department?			
14. Is supervision designated for all working hours?			
15. Are employees subject to regular evaluation of performance?			
C. Facilities of dietary department (insert appropriate comment)			
1. Receiving of food			
2. Dry storage			
3. Refrigeration			
4. Preparation of food			
5. Cooking of food			
6. Serving of food			
7. Dishwashing			
8. Waste and garbage disposal			
9. Ventilation of department			
10. Storage of housekeeping supplies			
11. Drinking fountains and hand wash basins in kitchen areas			
12. Is preventive maintenance adequate?			
13. Is there evidence of systematic replacement of equipment?			
14. Is there adequate office space for departmental needs?			
15. Adequacy of dining areas			
16. Adequacy of communications devices			
17. Adequacy of food distribution system			
D. Sanitary practices			
1. Is there regular inspection by an official sanitarian (monthly preferable)?			
2. Is housekeeping (including ceilings!) adequate?			
3. Is dishwashing adequate (thermometer temperatures _____)?			
4. Condition of storage and refrigeration areas			
5. Are there individual temperature controls in refrigerators?			
6. Is there adequate separation of food supplies and waste or garbage?			
7. Are uniforms required for all dietary employees?			
8. Are individual lockers provided?			
9. Are employee restrooms clean?			

and just as members of the medical profession increasingly recognize the emotional factors in illness, so the modern dietary administrator recognizes that the aesthetic standards of food service go hand-in-hand with the nutritional requirements in insuring both healthy and satisfied patients. Few hospitals using selective menus would be willing to give them up in view of their economy and good patient acceptance.

Summary

On such considerations as these, the new check sheet has been developed and now is in use in the Connecticut project. The increasing interest of the Joint Commission on Accreditation of Hospitals in the various aspects of hospital dietary departments makes it increasingly important for the administrator to have a systematic method of re-evaluating his food service. The spreading idea of dietary consultation on a regional or statewide basis makes the need for such broad approaches to dietary evaluation a continually greater one. The new check sheet is presented, not as a final answer but as a new step toward the goal of an effective, workable tool. Few will want to delete. Many will build upon it.

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***Connecticut Check Sheet for Continuing Dietary Consultation to Hospitals,* Concluded**

	RATING		
	Plus	Average	Minus
10. Is employee smoking controlled?			
11. Is the ventilation system clean and controlled for cross-infection?			
12. Are complete physical examinations of new personnel required before assignment?			
13. Are regular physical re-examinations required (every six months, at least)?			
E. Therapeutic functions			
1. Is there regular communication between the dietary and medical staff?			
2. Does the dietitian make medical rounds?			
3. Does the dietitian have access to patients' medical records?			
4. Does the dietitian comment on patients' medical records?			
5. Is there a current diet manual in use?			
6. Do qualified dietary personnel visit all patients regularly?			
7. Do qualified dietary personnel visit patients on modified diets regularly?			
8. Are standard diets checked for nutritional adequacy?			
9. Are modified diets checked for nutritional adequacy?			
10. Is a physician's written order required for all modified diets?			
11. Are discharge diets and nutrition instruction given patients?			
F. Food service standards			
1. Is there regular checking to determine acceptability of menus with patients?			
2. Is a selective menu offered all patients?			
3. Are patient meals properly spaced (not more than 14 hr. between evening and morning meals)?			
4. Are employee menus acceptable?			
5. Is food prepared to conserve nutritional values and enhance palatability?			
6. Does food reach the patients at correct temperatures?			
7. Do meals as served meet aesthetic standards for color, texture, and palatability?			
8. Are the individual preferences of patients utilized?			

Its Importance in Sanitation, Safety, and Quality Food Service

Preventive Maintenance of Equipment and Utilities[1]

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The author discusses ways to bring about understanding and cooperation between the dietitian and the engineering department.

"PREVENTIVE MAINTENANCE" is a phrase that has been used for many years and perhaps is still not understood thoroughly by those who should practice it and those who should receive the benefits. Simply stated, preventive maintenance is the establishment of a planning program of maintenance that can be worked out with the head of a department to reduce the number of breakdowns of equipment and utility services to the minimum. The results are increased production and lower operating costs, with which all department heads are interested. Thus, the dietary service of any organization and you, as dietitians responsible for this service, should have an understanding of what preventive maintenance can do for you and your department.

The Chief Engineer's File

A good preventive maintenance program must be worked out by the chief engineer in cooperation with the chief dietitan. This means good cooperation and understanding between the chief engineer and the chief dietitian as well as the employees.

In setting up this program, it is necessary first for the chief engineer to obtain all of the literature on each piece of equipment in the dietary department. This literature should include installation and operating instructions, lubrication schedule, a parts list, and any illustrations that will show how the equipment can be disassembled for ease of maintenance. He should also obtain all of the literature on fixed equipment, such as refrigeration, ventilation and exhaust systems, and elevators. This literature should be filed properly so that it can be easily referred to when needed, as it is very important in training the maintenance mechanics to know how to make repairs and properly lubricate and inspect each item of equipment. An adequate stock of repair parts should be maintained at all times so that repairs can be made without delay.

The chief engineer should also establish a card file system for each piece of equipment, both fixed and portable, which would give the history, the location, the usage, and the time of day each piece of equipment is operated. The dietitian, where possible, should give the engineer the operating time schedule for each piece of equipment so that he can prepare an inspection and lubrication program that will interfere least with the operation of the dietary department. By knowing the operating time schedule, the engineer can plan routine shut-downs of equipment for partial dismantling and internal inspection. With such a program planned with the dietitian, each item of equipment can be checked and repairs made where indicated, thus keeping breakdowns to a minimum and efficiency of over-all operation high.

Engineer's Responsibility in Sanitation

As a part of the preventive maintenance program, it is important for the chief engineer to have a general knowledge of sanitation and plumbing codes and their importance in the storage, preparation, and serving of food. This knowledge should include an understanding of proper construction and installation of equipment as well as the importance of being able to keep equipment clean. This includes fixed as well as portable items.

Maintenance of adequate handwashing facilities for employees is important, especially in all food

[1]Presented at the 41st Annual Meeting of The American Dietetic Association in Philadelphia, on October 21, 1958.

preparation and serving areas. Toilet facilities should be properly maintained also, so as to reduce possible contamination. The engineer should understand the importance of maintaining handwashing and toilet facilities as a part of the over-all sanitation program.

He should also know the importance of maintaining proper temperatures for steam, refrigeration, and gas equipment and what these temperatures should be for proper storage, preparation, and serving of food. He should also learn what the results will be when improper temperatures occur from failure of utility services. The dietitian should not hesitate to "educate" the engineer on this subject as she is best qualified to do so. Also, she is the one who is directly blamed for what happens when spoiled food results or is served.

Thus, it is important that the engineer use this knowledge of proper sanitation in seeing to it that all storage facilities, equipment, both fixed and portable, and utility services are properly constructed, installed, and maintained.

Knowledge the Engineer Needs

Let us briefly discuss some of the things the engineer should know so that he can properly instruct his mechanics in the importance of sanitation and plumbing. I have mentioned the proper maintenance of toilet and handwashing facilities. He should know how storage facilities should be constructed so that they are vermin-proof, have no direct sewerage connection in the floor, and can be easily maintained and cleaned. Floor drains should not be connected directly to a sewer but run to the outside of the storage room to a floor drain. There should be a water faucet above this floor drain so that the water seal in the trap can be maintained at all times without interruption.

Along with this is the proper installation of refrigeration equipment and shelving so that temperatures can be maintained in all areas of the storage box. Shelving in non-refrigerated storage areas should be built so that proper cleaning can be done on regular schedules.

In the construction of equipment that requires plumbing connections, the engineer should make certain the water supply is not below the overflow rim of the water container or has a back syphon device in the supply line on the discharge side of the valve. Where there is a possibility of food contamination, there must be no direct connection to the sewer. It is important, also, in the construction of this equipment, that all areas can be cleaned and that maintenance work can be done without complete dismantling or disconnecting from service lines.

Consideration should also be given to installing equipment with space in between—such as steam cookers, mixers, and similar items—for proper cleaning and maintenance. Too often there is not enough space allowed, with the result that cleaning is not done and maintenance is neglected or becomes a big job. Where it is possible to gang equipment together, such as stoves and ovens, bain maries, and other counter and cabinet equipment, the engineer should see to it that all inaccessible areas are closed off and sealed to prevent dirt pockets and breeding places for vermin.

Where equipment is installed along a wall and is open under the counter, such as sinks with double drain boards or dishwashing equipment, it should not be installed tight against the wall but from 1 to 2 in. away, so it is possible to clean properly behind the splash backs and to clean out anything that falls behind this equipment. Even though the engineer is not directly involved in cleaning and vermin control, he needs to know the problems and see that equipment is installed properly or made accessible.

The engineer should also be acquainted with the control of flies and insects. The dietitian can discuss this problem with him so that effective means can be used, such as electric fly screens in strategic areas where control will be most effective. We all know that flies are most effective carriers and must be controlled. The engineer should understand all of these various problems and how to solve them as a part of his maintenance program. He must literally function as the sanitarian of the hospital who is best qualified and equipped to assist in maintaining a sanitary environment.

Electrical Problems

In addition to an understanding of sanitation and plumbing, the engineer must have a good working knowledge of electricity. He should be acquainted with the National Electric Code so that those items of equipment requiring electrical connections will be safely connected. This means that each piece of equipment is properly grounded; that all wiring connections are soldered and taped within the connecting boxes; that switches are provided that are safe to operate; that each electrical service outlet to a piece of equipment has a disconnect switch and a pilot light to indicate when the switch is on or off, and that all electrical safety devices are working at all times.

These are but a few of the many electrical items the engineer must know and also instruct his mechanics in observing when checking equipment.

Because of the many electrical problems, the engineer should be called upon to advise when new equipment is planned for the dietary department. Too often, electrically operated equipment is purchased without the proper electrical specifications. This results in an expensive installation, or the equipment does not meet the requirements of the

National Electric Code and does not have an Underwriters Laboratory label. The engineer is the person best qualified to help the dietitian in writing specifications to make sure the equipment can be connected to existing utility services, whether it is electrical, plumbing, steam, gas, or a combination of any two.

As a part of the maintenance program and in order to assure thorough cleaning of equipment, the engineer can assist the dietitian by arranging to have dietary personnel present when a piece of equipment is scheduled for an inspection that requires partial or complete dismantling. While the mechanic is making his thorough check or repairs, time could be allowed for the dietary personnel to clean the equipment thoroughly. Such an arrangement could be planned by the engineer and dietitian for items of equipment which cannot be cleaned properly without partial dismantling. If scheduled properly, such an arrangement should cause little loss of time on the part of the mechanic and dietary personnel, and will result in much more sanitary equipment.

The Repair Requisition System

Now it must be recognized that, even though a rigid maintenance schedule has been worked out and repairs made where necessary, there will be callbacks due to a failure somewhere. Either the maintenance man has not done a thorough job, or the employee in the dietary department has been careless. In either case, the trouble should be reported to the engineering department as soon as possible by telephone, direct requisition slip, or repair order. All telephone orders should be followed by a requisition slip signed by the dietitian. This may seem like extra work; however, a requisition system is the only way to set up an effective record on maintenance of equipment throughout the dietary department or any other department in the hospital.

There are several things that a requisition system helps determine. First, it determines the amount of work done over and above routine maintenance. Second, it is a check on the amount of repairs necessary for each piece of equipment. Third, it helps determine whether it is cheaper to repair or replace a piece of equipment. Fourth, it determines whether a piece of equipment gave good service. And, of course there are factors involved, such as age, abuse. and amount of use.

Another thing to consider when using a requisition system is that it helps to eliminate any argument over whether a job was reported, and fixes responsibility in that respect.

In other words, if all requests, even those that are telephoned because they are "emergencies," are confirmed in writing, it would eliminate one source of friction. It should be remembered that all routine requests should be made by requisition and all "emergencies," including, equipment needed for food preparation and service, should be telephoned and followed by a requisition marked "confirmation."

In the larger hospitals, it is impossible for the chief engineer to make a daily inspection of each department. Therefore, a requisition system is his only guide and check on the amount of work done over and above routine maintenance. In the small hospital, this is not too much of a problem. Nevertheless, I feel that even here a requisition system is worth while.

Training Dietary Personnel

As a part of a good preventive maintenance program, the dietitian should request the engineer to assist her in training dietary employees in proper operation and handling of equipment. It is important that they know when equipment is not operating properly so it can be shut down and reported to the engineering department. This is essential in keeping breakdowns to a minimum as well as maintaining efficient operation. It will also help in preventing accidents, since accidents frequently occur through a lack of knowledge on the part of the operators in understanding the importance of safety devices on equipment.

Also, as a part of this training program, there should be included information on fire prevention as well as safety, and the engineer is the best qualified person to give this information to the entire dietary staff. The dietary personnel should know and understand how and where fires can occur and then be instructed in good housekeeping as well as in the use of fire extinguishing equipment which may be needed in an emergency.

The critical fire areas are the ventilating hoods and exhaust systems; stoves and ranges; and electrical equipment, such as motors, switches, and heating elements. The dietitian should be assured by the engineer that he is following through on a program of fire prevention that involves regular cleaning of hoods, filters, and exhaust ducts over cooking areas, cleaning of grease around motors and switches, and checking of thermostats, heating elements, and electrical wiring for deterioration—also that adequate fire fighting equipment has been installed for the dietary personnel to use if and when necessary.

Benefits of Cooperation

If good relations can be developed between the maintenance mechanics and the dietary personnel, there should be no reason why the mechanics cannot assist in helping instruct dietary personnel. By the same reasoning, there should be no reason why the dietary personnel cannot feel free to ask questions of the mechanic or to inform him of any equipment that

is not functioning properly or is out of order. However, should conflicts arise between personnel of the two departments, the dietitian and engineer should resolve the problem to the satisfaction of both departments. Training should be a continuous process and there is no question of its value in a good maintenance program.

Summary

The dietitian must take the responsibility of teaching the engineer the importance of good food service in the successful operation of her department. He should be made aware of the fact that food production as well as food service is greatly affected when equipment is not operating properly or is out of order. The more the engineer can learn about the function and operation of the dietary department, the better he can instruct his mechanics in doing their job more effectively. His knowledge of mechanics, which includes electrical, plumbing, gas, and steam equipment, his understanding of what sanitation is and how it can best be maintained, his planned program of maintenance, his ability to train people plus other qualifications should, when properly applied, result in the development of and carrying out of a good preventive maintenance program.

Understanding and cooperation must exist between the engineer and the dietitian and their departments in order to have quality food service through a planned program of maintenance.

Buying Equipment

You can be sure you receive the quality and type of equipment you want, *only* if you prepare detailed specifications of your requirements and insist that the architect or whoever is responsible for furnishing information to bidders follows these specifications explicitly.

The final decision on the purchase will in all probability lie elsewhere. However, your recommendations as to type and construction, based on exhaustive study of the problem, should be carefully considered.

Specification writing is simply putting down in black and white a complete description of what *you* want to buy. Every reputable manufacturer has standard specifications available for the asking. His representative will review them with you and explain the important points. After studying several of them, you will be in a position to decide what you want. This study will include:

(a) Making certain the equipment will operate on the utility outlets that may already be roughed in. If substitutes are later offered, be sure they, too, can be used with these outlets.

(b) Obtaining samples where construction and other similar factors are involved.

(c) Obtaining quotations *only* from reputable bidders with good performance records.

Specifications, when finally written, should incorporate the following information or clauses:

(a) Sizes, materials, and methods of construction in minute detail. Brief specifications invite inferior substitutions and you have no recourse if you did not clearly state the quality desired.

(b) Type of workmanship (equal to Manufacturer A or Manufacturer B).

(c) Construction to meet the standards of the National Sanitation Foundation and local ordinances.

(d) Date of delivery.

Having prepared such specifications, you must be sure, on delivery, that the successful bidder furnishes equipment in strict accordance with specifications and that he be made to replace any equipment which does not meet specifications with the type ordered. If substitutes are used with the "or equal" clause of the contract, be certain that they really are equal. *The burden of proof should be on the seller.*

A warning is in order. One of the biggest loopholes in handling contracts for kitchen equipment is the practice of including it in the general contract. This might be desirable where certain items must be fitted to walls or through openings, particularly if the building is in a remote location. The contractor has men to handle equipment when it is received, whereas the supplier does not.

However, this is an open invitation to any *so-called* dealer, whether he has a competent installation or service department or not, to quote on your requirements. Unfortunately, the dealers who are not in a position to render installation service are frequently the low bidders. They then foist their responsibility off on to a friendly contractor with the result that no one does the job right and *you* must live with the mistakes.

The general contractor may put all of the subcontracts "on the auction block" and place his order with the low bidder. Fortunately, this practice is not too widespread, but it does exist. The safety valve in this case is to include in the specifications provisions that:

(a) Regardless of how the award is made, the final award be subject to the approval of the architect and/or the owner or his representative (you).

(b) The successful bidder be required to furnish detail drawings of all specially built items, plus a brochure illustrating and describing all brand name items.

(c) Material be subject to final approval of the architect and the owner or his representative (you) before any work is started.

—Justin H. Canfield, Food Facilities Engineer, Southern Equipment Company, St. Louis, speaking at the 41st Annual Meeting of The American Dietetic Association in Philadelphia, on October 24, 1958.

Effect of Size and Internal Temperature

Cooking Choice Grade, Top Round Beef Roasts[1]

NANCY MARSHALL, LEVELLE WOOD, and MARY BROWN PATTON, Ph.D.

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MEAT IS traditionally included in the main meal of the average American family practically every day. The other foods are often chosen on the basis of the kind of meat served. Meat has prestige value, and in eating establishments outside the home it often accounts for approximately 50 per cent of the food cost dollar. Operators of such eating establishments and customers as well can profit from methods that will give satisfaction yet keep cost as low as possible.

A survey of the beef cookery practices was made in six food service units on the campus of The Ohio State University. All were interested in the utilization of the less tender and less expensive cuts of beef. The majority were using top round of beef for roasting, but there was a lack of uniformity in preparation. Variations in sizes of roasts and the degrees of doneness to which they were cooked were observed. The weights of the roasts before cooking ranged from approximately 5 to 20 lb. and the final internal temperatures of the beef roasts varied from 160°F. to 180°F.

It is safe to assume that other food service units in the more than 35,000 licensed restaurants, churches, schools, hospitals, governmental institutions, and non-classified units in Ohio and those in other states would be interested in the findings from research on the effect of size and temperature on the preparation losses, yield, and cooking time of beef roasts. This paper deals with the first phase of such a study, namely, the effect of size and internal temperature.

[1]This study was supported in part by funds from the North Central Regional Project 31, Effect of Large Quantity Preparation and Service on Quality and Yield of Meat, Poultry, and Vegetables. Contribution No. 14-59, Ohio Agricultural Experiment Station. Received for publication February 6, 1959.

[2]The cooperation of the Animal Science Department and the Statistical Laboratory of the Ohio Agricultural Experiment Station is acknowledged.

Procedure

Paired, Choice grade, top round roasts of beef were obtained through the Animal Science Department of The Ohio State University. One member of the pair, weighing approximately 15 lb., was cooked whole; the other was cut into two pieces, one roast weighing approximately 10 lb. and the other 5 lb. The latter was cut from the small side of the round, and a larger proportion of it was covered with a surface layer of fat than was the medium-size roast. The meat was aged seven days, and then stored for one to two days at a temperature of 34°F. in a reach-in refrigerator.

Roasts were cooked to five different internal temperatures: 140°F., 149°F., 158°F., 167°F., and 176°F., respectively. Paired roasts were cooked to the same internal temperatures; seven replications were made for each degree of doneness.

The roasts were wiped with damp cheese-cloth before cooking to remove any collection of drippings. Each roast was placed fat side up on a wire rack in an aluminum roasting pan 18½ by 12½ by 3¾ in. Right-angle thermometers were inserted in each roast to determine when the desired internal temperature was reached. The roasts were cooked in preheated, heavy-duty electric ovens with the thermostats set at 300°F.

Before cutting, the meat was cooled in the roasting pan at room temperature for 1 hr. after removal from the oven. Data collected included: raw weight of the roast; weights immediately after removal from the oven and after standing 1 hr.; and weight and number of portions. Weighings were also made to determine the drippings and evaporation losses during cooking and during the cooling period. All of these weights were measured to the nearest quarter pound. The trimming losses were weighed to the nearest gram. No portion consisted of more than two pieces of meat; thus trimming loss included some meat acceptable for other pur-

poses, as well as excess fat. The weight of serving portions, plus evaporation, trimming, and dripping losses, was subtracted from the raw weight to calculate the juice loss. The drippings were chilled, and the solidified fat collected and weighed to the nearest gram. All losses were expressed as the percentage of raw weight. Portions of meat were recorded as the number per pound of raw weight.

Four slices were cut from the large end of the roasts; then the cores for the Warner-Bratzler shear test were removed. One core each was taken from the small and medium-size roasts. Two cores were taken from the large roast. The positions from which these cores were taken from the large roast corresponded to those from their counterparts. Each core of meat was cut three times by the Warner-Bratzler shear device, and the average pounds of force were calculated. The remainder of the roast was cut on an electric meat slicer set at "20," so that slices were approximately ⅜ in. thick. The meat was cut and weighed into 70-gm. (2½-oz.) portions and the number recorded.

The data were analyzed statistically to determine the significance of the differences in losses and yield among the three sizes of roasts cooked to five internal temperatures.

Results and Discussion

In this study, 5-, 10-, and 15-lb. pieces of Choice grade, top round beef were roasted to five different internal temperatures (140°F., 149°F., 158°F., 167°F., and 176°F.) in ovens with the thermostat set at 300°F. Losses, yields, and cooking times were compared. All losses were expressed as the average percentage of the raw weight for seven replications. Yield was calculated as the number of 70-gm. (about 2½-oz.) portions per pound. Cooking time was expressed as total cooking time and minutes per pound.

EVAPORATION LOSS

Evaporation was responsible for the greatest loss in preparation. The amount and the proportion of evaporation loss increased with an increased degree of doneness until an internal temperature of 167°F. was reached. Above this temperature, the losses from the 10- and 15-lb. roasts appeared to stabilize, while those from the 5-lb. roasts continued to rise. When roasts of all sizes were cooked to an internal temperature of 140°F., evaporation accounted for about one-third of the total losses, while at 176°F., it accounted for approximately half of the losses.

The influence of the degree of doneness, as well as that of size, on evaporation losses is shown in Figure 1. The evaporation losses from the 15-lb. roasts were significantly (1 per cent level) less than those from the other roasts at all degrees of doneness. There was little difference in the percentage of evaporation losses between the 5- and 10-lb. roasts.

As would be expected, most of the evaporation loss occurred while the meat was in the oven. The amount lost during the hour immediately following removal from the oven was relatively small, averaging between 1.4 and 2.1 per cent for each size of

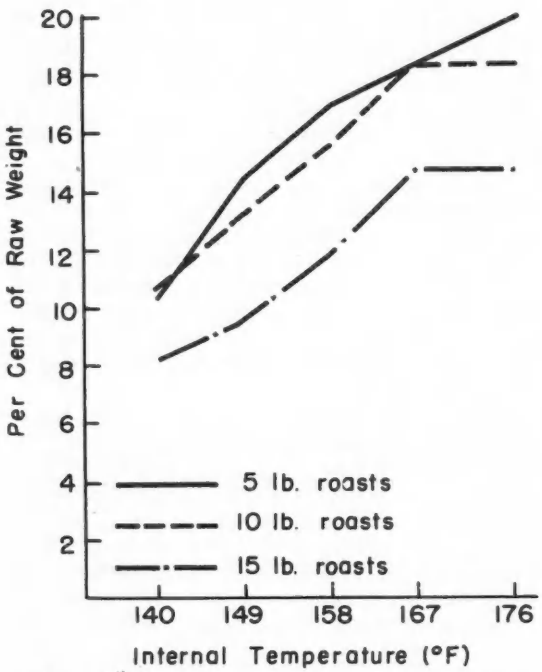

FIG. 1. *Evaporation losses from three sizes of top round roasts of beef cooked to five internal temperatures.*

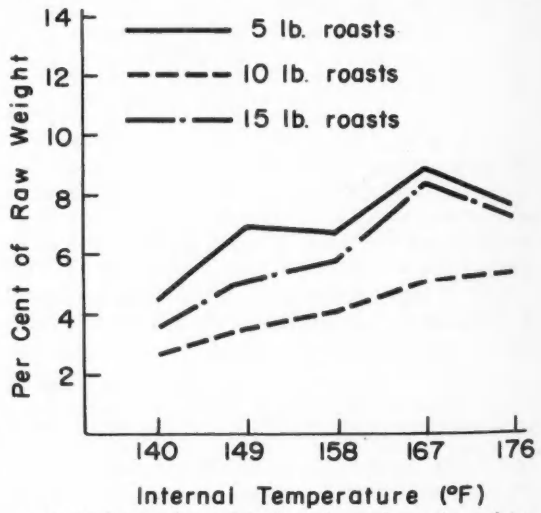

FIG. 2. *Losses from drippings from three sizes of top round roasts of beef cooked to five internal temperatures.*

roast cooked to each degree of doneness. Degree of doneness did not appear to affect evaporation loss during standing, but the size of roast did, with greater losses from the smaller ones.

DRIP LOSS

The effect of a rise in internal temperature was less consistent and pronounced on drip loss than on evaporation. A trend for drip loss to increase with the degree of doneness is evident in Figure 2. The apparent decrease in loss with higher internal temperature were not statistically significant. Two of the 5-lb. roasts cooked to 167°F., had unusually high drip losses, which raised the average for this group.

Size also influenced drip loss. That from the 10-lb. roasts was significantly (1 per cent level) less than from the other two sizes, except at 140°F. The losses from the 5- and 15-lb. roasts were similar; the only significant difference was at 149°F.

The drip loss during the 1-hr. standing period was less from the 10-lb. roasts than from the other two sizes. The loss during standing tended to increase with doneness. The differences in the drip losses during standing among the various sizes and internal temperatures were small, and it was not determined if these were significant.

Approximately half of the drippings consisted of fat. As expected, the amount of fat corresponded to the amount of finish on the raw roasts. The 5-lb. roasts had the highest average percentage of fat in the drippings and the 10-lb. roasts, the least. As seen in Figure 3, an increased degree of doneness resulted in more fat in the drippings. The large amount of fat shown for the 5-lb. roasts cooked to 167°F. was partially due to two roasts which had unusually large amounts in the drippings. These data were not analyzed statistically to determine the significance of the differences.

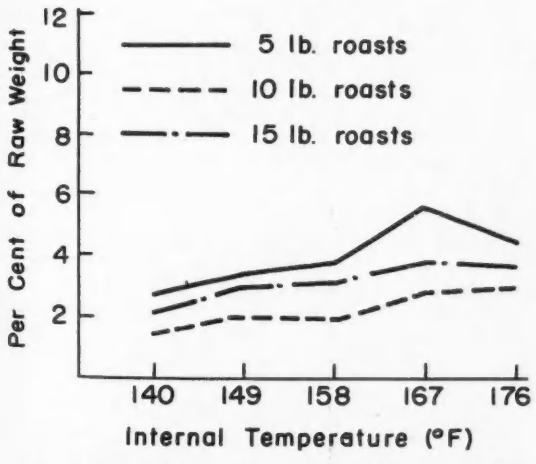

FIG. 3. *Fat in drippings from three sizes of top round roasts of beef cooked to five internal temperatures.*

JUICE LOSS

Juice loss tended to decrease as doneness increased. This trend is noted with the 5- and 10-lb. roasts in Figure 4. The degree of doneness had little effect on the juice loss from the 15-lb. roasts; the only significant difference was between 158°F. and 167°F. With the other two sizes, juice loss tended to stabilize after an internal temperature of 167°F. for the 10-lb. and 158°F. for the 5-lb. roasts was reached.

The 15-lb. roasts had a higher juice loss than the other two sizes, but the difference between the 10- and 15-lb. roasts was not significant at 140°F. and 149°F. At the lower degrees of doneness, the 5-lb. roasts lost the least juice, but the differences between these and the 10-lb. roasts were not significant at 167°F. and 176°F.

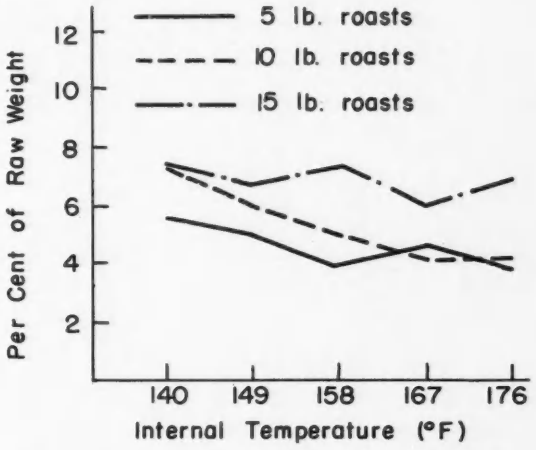

FIG. 4. *Juice losses from three sizes of top round roasts of beef cooked to five internal temperatures.*

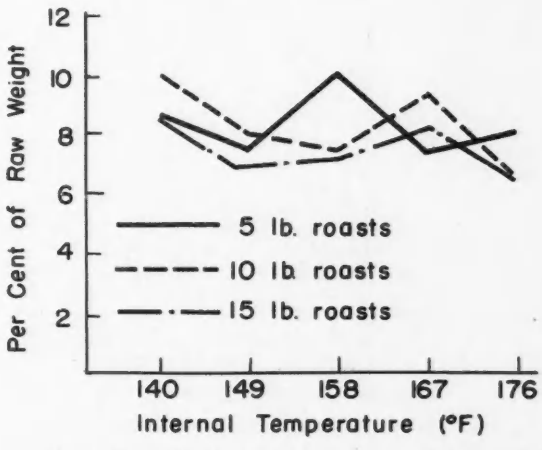

FIG. 5. *Trim losses from three sizes of top round roasts of beef cooked to five internal temperatures.*

TRIM LOSS

Excess fat, the end slices, and small pieces of meat were classified as trim loss. No consistent trends were noted (Figure 5). Statistical analysis showed that the variation within the groups was greater than that due to size or degree of doneness. This may be partially explained by the large degree of subjectivity in determining trim loss.

The roasts were cut on a slicing machine set at "20," and according to the standards of this study, not more than two pieces of meat were used for a 70-gm. (about 2½-oz.) serving. In some instances, a number of small pieces, each weighing less than 35 gm., remained. These were usable for other purposes, but were not acceptable as roast beef servings. The amount of meat included in the trim loss was affected by the shape of the roast, the thickness of the slices, and the method of choosing one or two pieces to make a serving.

Trim loss would be influenced by the standards of the food service. Some may desire to use only one piece of roast beef for a portion, which would increase the trim loss. Others may not object to serving several pieces as a portion, which would lower the loss.

TOTAL LOSSES

Figure 6 shows that the total losses rose with increased internal temperatures until 167°F. was reached. Here, the losses appeared to stabilize, as the apparent declines at 176°F. are not significant.

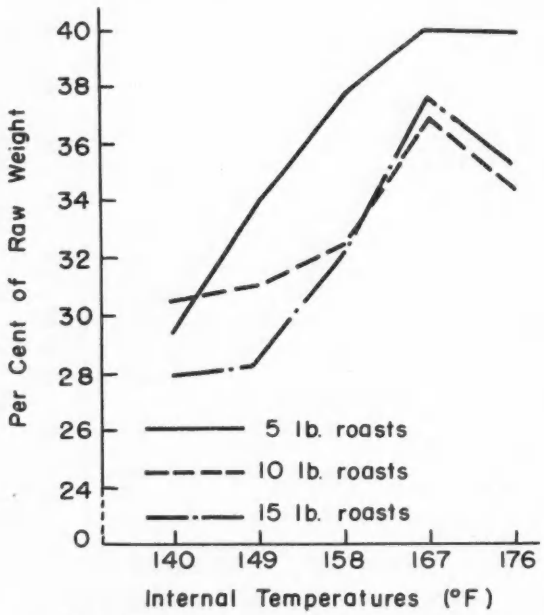

FIG. 6. *Total losses from three sizes of top round roasts of beef cooked to five internal temperatures.*

The optimum size for the minimum loss varied with the different losses. The trend was for the 15-lb. roasts to have the lowest evaporation loss, while the 10-lb. pieces lost the least in drippings. When total losses were considered, those from the 10- and 15-lb. roasts were approximately equal after an internal temperature of 158°F. was reached. Below this temperature, the 15-lb. roasts lost less than the 10-lb. ones. Total losses from the 5-lb. roasts were significantly higher (1 per cent level) than those from the other two sizes, except at 140°F.

PORTIONS PER POUND

The number of portions corresponds to the total losses. Figure 7 shows fewer per pound as internal temperature rose. The apparent increase in number of portions with an increase in temperature in some instances was not significant.

Except at 140°F., the 5-lb. roasts had significantly fewer portions per pound than the other two sizes. There was little difference between the 10- and 15-lb. roasts after an internal temperature of 158°F. was reached.

COOKING TIME

Longer total cooking time was required as size and degree of doneness increased. However, as shown in Table 1, fewer minutes per pound were required for cooking the larger roasts. The difference in average total cooking time increased with the degree of doneness until an internal temperature of 167°F. was reached, after which it appeared to stabilize or decrease. This difference was greater between the 5- and 10-lb. roasts than between the 10- and 15-lb. ones. Approximately 1 to 1½ hr. longer were required to cook the 10-lb. roasts than

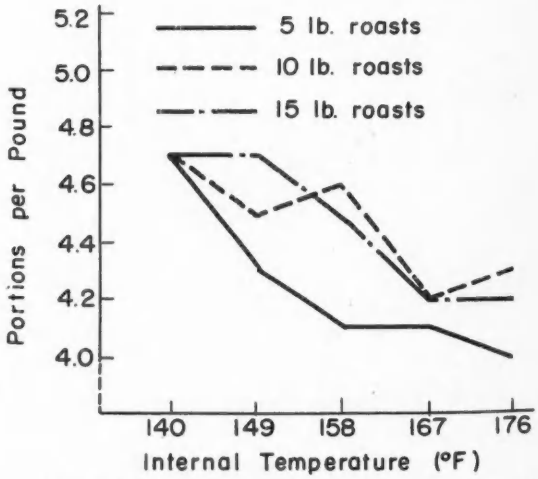

FIG. 7. *Yield from three sizes of top round roasts of beef cooked to five internal temperatures.*

TABLE 1 **Average cooking time of three sizes of top round roasts of beef cooked to five internal temperatures**

SIZE OF ROAST	FINAL INTERNAL TEMPERATURE									
	140°F.		149°F.		158°F.		167°F.		176°F.	
	Total time	Time per pound	Total time	Time per pound	Total time	Time per pound	Total time	Time per pound	Total time	Time per pound
	hr.—min.	*min.*	*hr.—min.*	*min.*	*hr.—min.*	*min.*	*hr.—min.*	*min.*	*hr.—min.*	*min.*
5 lb.	2 20	27.2	2 47	32.4	3 0	37.3	3 19	39.7	3 34	44.2
10 lb.	3 16	18.8	3 54	22.7	4 23	25.2	4 48	28.7	5 2	29.2
15 lb.	3 56	15.3	4 30	17.3	5 15	20.6	6 03	23.8	6 8	24.1

the 5-lb. ones, while the average total cooking time of the 15-lb. roasts was approximately ½ to 1½ hr. more than that for the 10-lb. roasts.

WARNER-BRATZLER SHEAR SCORES

The Warner-Bratzler shear scores varied greatly and were inconsistent, although all roasts were from Choice grade beef. No trends due to the degree of doneness or to the size of roast could be observed. It would be necessary to obtain roasts more nearly uniform in tenderness before the influence of size and internal temperature could be determined.

Summary and Conclusions

The cookery of seven sets of 5-, 10-, and 15-lb. Choice grade, top round beef roasts to internal temperatures of 140°F., 149°F., 158°F., 167°F., and 176°F., respectively was accomplished in a 300°F., electrically-heated oven. Recorded data included: weights of raw meat and of the cooked meat on removal from the oven and after standing 1 hr. at room temperature; and the yield. From these data were calculated the percentage preparation losses based on the uncooked weight due to evaporation, drip, and trim; the number of portions; and the time per pound for each degree of doneness.

The data were analyzed statistically and indicate that: (a) Choice top rounds of beef can be utilized satisfactorily as roasts in medium to low food cost operations; (b) the size of the roast affects total preparation losses; (c) losses for the 10- and 15-lb. roasts are significantly less than for the 5-lb. at all degrees of doneness except rare; (d) cooking losses increase with degree of doneness up to the medium-well done stage; (e) yield decreases as degree of doneness increases, and is greater in 10- and 15-lb. roasts than 5-lb. at all degrees of doneness except rare; and (f) time per pound decreases with increased size of roast. The 10- and 15-lb. roasts showed less difference than did the 5- and 10- or the 5- and 15-lb. roasts.

Mentally Defective Children

It is well known that the time at which injury to the developing fetus occurs results in a different effect on the production of congenital anomalies. During the eighth to twelfth week of fetal life, the cerebral cortex is undergoing its organization into the various molecular layers. This period would be the critical time during which maternal stress would be apt to lead to neuropsychiatric disabilities which result from cortical disorganization.

A study at Columbus (Ohio) State Hospital of admissions of mentally defective children born between 1913 to 1948, indicated that significantly more had been born in the winter months, January, February, and March. Hence, the third month of fetal life would be June, July, and August.

During these hot summer months, pregnant women may decrease their food intake, particularly protein, to dangerously low levels and consequently damage their developing babies.

If this were so, one would expect that more mental defectives would be born following hotter summers than after cooler summers. This was exactly what was found to a highly significant degree. Possible explanations were sought in the occurrence of summer encephalitis and an increased birth rate in the lower socio-economic group, but these were not confirmed.

There is a growing body of evidence which indicates that it is very important for women in the child-bearing age to have good diets if they are to produce healthy, normally developing children. Inadequate dietary intake during pregnancy, because of heat as well as substandard economic conditions, may be an important link in the vicious cycle that results in poor physical and mental growth. —*Abstracted from "Mentally Defective Children" by H. Knobloch and B. Pasamanick. Am. J. Pub. Health 48: 1201, 1958.*

Evaluating Protein Quality for Advertising[1]

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"VOLUMES HAVE been written about the nutritive value and amino-acid composition of isolated proteins or the proteins of separate foods, but for practical purposes much of this work seems to be in a nutritional vacuum. The proof of the pudding is in the eating, and what is wanted is reliable assessment of the diets as eaten by animals or man, in health or disease, in plenty or want." This statement was made by Henry and Kon at a symposium on protein nutrition held in October 1957 and reported in the *Proceedings of the Nutrition Society (1)*.

In recent years, the rapid increase of the human population and the effort to improve the nutritional status of people throughout the world has increased the emphasis on proteins and encouraged attempts to improve the quality of protein of the diet so that the available supply can be most efficiently utilized. Quality may be improved, either by: (a) increasing the consumption of animal protein foods or; (b) using legumes, cereals, and other plant sources that can be selected on the basis of a desired pattern of available amino acids, even when no one or two of the products alone would be adequate, or by adding synthetic amino acids in sufficient quantity to achieve the desired balance. It has been demonstrated in recent years in Central America and in South Africa that it is possible by the judicious choice of local foods to improve materially the protein quality of a predominantly vegetable diet. This underscores the importance of considering food mixtures rather than individual foods in evaluating protein quality.

In practical nutrition, we are concerned not so much with the quality of any particular ingredient or food, as we are with the quality of the entire meal, or of a food mixture. The unusual situation exists wherein the total may be much greater than the sum of the individual parts. From a knowledge of the biologic values alone one cannot predict the quality of the mixture. It is important to have an understanding of the complexity of the problem in order to evaluate properly the significance of protein levels and quality in their practical everyday application.

Although protein malnutrition is a most important dietary problem in underdeveloped areas of the world, it is unlikely to be a significant problem for the people of the United States for many years to come. The Recommended Dietary Allowance of the National Research Council (2) for protein is 1 gm. per day for each kilogram of desirable weight. This figure "includes a reasonable margin of safety to meet added demands of individual variation in protein requirement and the difference in nutritive quality of proteins derived from different food sources." The average daily intake of protein in the United States is somewhat more than 100 gm. per capita, of which two-thirds is of animal origin and one-fifth from cereal grains.

Nevertheless, recent research activity on the role of proteins and amino acids in nutrition has stimulated a marked commercial trend toward emphasis of the protein content and the protein quality of a number of food products. Special attempts are being made to improve the protein quality of the cereal foods so that they will be the "equivalent of meat, milk, and eggs." Efforts to improve our food supply should always be encouraged, but it is important that enthusiasm in the commercial promotion of new products be tempered by a clear understanding of the facts and their significance. Special caution is needed in the case of proteins because several factors must be considered, namely, quantity, quality, daily intake, and supplementary relationship of the product to the other proteins of the diet. It must be remembered that the protein contribution from cereals and other plant sources in a mixed diet is much greater than would be indicated by their protein quality when determined individually.

[1]Presented before the Chicago Nutrition Association on January 14, 1959.

Misleading Advertising

Since advertising and labeling are among the most widely used means for the dissemination to the public of information on nutrition, we must all be agreed that misleading concepts are to be avoided. Furthermore, Section 403(a) of the Food, Drug, and Cosmetic Act states: "A food shall be deemed misbranded if its labeling is false and misleading in any particular." The United States Supreme Court has held that labeling may leave a false and misleading impression, even though any individual statement may be literally true.

The great numbers of advertising and labeling claims to which the public has been exposed in recent years have posed a difficult enforcement problem for the Food and Drug Administration. These claims refer to "more," "improved," "better," "more complete" protein, and so on, in the product, and to the overwhelming importance of proteins in general, and the advertised product in particular for the maintenance of good health.

For example, it has been estimated that specialty breads constitute 5 to 6 per cent of the total bread market. About one-third of these make some representations in their labeling regarding the protein content and value of their protein. Although this represents a small proportion of the total bread market, nevertheless, it amounts to a considerable volume of business and by far the largest proportion of all advertising of bakery products. The implications with respect to the need for increased dietary protein and the value of the particular product for satisfying this need are often likely to be misleading. An obvious suggestion is that the average person in the United States does not receive adequate protein. A more subtle implication resulting from the promotion of these breads as special sources of protein is that ordinary white, or enriched white bread, is nutritionally inferior. In fact, there is an implication that ordinary bread should be avoided if one is interested in weight control, since it is primarily an energy food—a source of calories.

Now the National Research Council recommends that the daily intake of a 70-kg. man shall be 3200 calories and 70 gm. protein. The ratio of the calorie requirement to protein requirement is 46. A food or food mixture in which the ratio of calories to grams of protein is 46 would satisfy the recommended protein intake without providing excess calories. The ratio in foods of animal origin, such as meat, fish, cheese, and so on, ranges from 5 to 20—usually below 10. The ratio in bread is thirty. It is evident that even if bread were the only item in the diet, it could easily meet the protein requirements without excess calories.

There may be some question as to whether the nutritive quality of bread protein is high enough adequately to meet the protein requirements, but again we must remember that "man does not live by bread alone." Even in the most unusual situation, the daily diet would contain another food. Since all foods of animal origin, and many from vegetable sources, serve to supplement the protein of bread, the nutritive value is thus improved. Only with excessive intakes of cakes, pastries, candy, fats, nuts, and fruits would the ratio of calories to protein exceed 46. In such cases, other manifestations of malnutrition would probably become apparent and could only be corrected by drastic changes in dietary habits.

The Dilemma of the Enforcement Body

The enforcement official is faced with the following dilemma. In a mixed diet of the kind generally consumed in the United States, the protein quality of any single food is influenced by the rest of the daily diet, and for practical purposes, the protein quality of the entire meal is the only significant consideration. Shall the enforcement official consider that label representations for protein need only refer to *quantity* and that statements about the protein *quality* of any individual product are meaningless? Or, must he maintain that the dietary pattern of each individual is not necessarily reflected by the national or regional averages of food utilization shown by dietary surveys? Therefore, truthful and informative labeling with respect to protein must indicate the nutritional contribution that may be expected from any given product when consumed alone, unless the label explicitly states otherwise.

Our friends in the Canadian Food and Drug Directorate have concluded that it is impractical to consider all of the possible supplementary relationships for any single food; and that truthful and meaningful label statements with respect to protein can be made only for the particular item considered independently. Since the Canadian food and drug law confers on enforcement officials the authority to approve labeling and advertising for foods, they have introduced a system for meeting the problem of representations made for protein that considers the amount of protein in the product, the nutritive quality of the protein, and the amount of protein consumed in the average individual daily intake of the particular food.

For example, a typical white bread contains about 9 per cent crude protein. A reasonable daily intake for bread, according to the Canadian tables, would be 150 gm. or five slices. This much bread would result in a protein intake of 13.5 gm. The protein efficiency ratio for white bread is 0.74 (casein=2.8). Multiplying the protein intake (13.5) by the protein efficiency ratio 0.74, gives a rating of 10.0.

TABLE 1 Protein content and quality of a number of specialty breads

RANGE	NUMBER OF BREADS
Protein (N x 6.25)	
%	
8.9—10.1 (standard breads)	3
10.8—11.8	7
12.1—13.4	5
14.3	1
16.1—17.1	4
Protein Efficiency Ratio (Casein=2.8)	
0.56—1.01 (standard breads)	3
0.55—0.73	3
0.84—1.00	4
1.13—1.27	5
1.38—1.54	5

In this manner, with values for protein content and protein quality obtained experimentally by standardized procedures and using arbitrarily accepted values for usual daily intakes, protein scores would be determined for each product. Products with scores under 20 are to be classed as poor sources of protein, and any advertising or labeling claims regarding protein cannot be made for them. Products with scores between 20 and 40 can claim to be good protein sources, and those with scores over 40, excellent sources.

Of course, many objections may be raised to these proposals; for example, the supplementary value of animal protein foods is not given any weight. This system should be considered only as a device to control the claims with respect to the protein value of foods in labeling and advertising, and for this purpose, it appears to offer a solution to a complex problem. The Food and Drug Administration in this country does not have similar authority, so that it cannot deal with the problem in the same way.

Survey of Special Breads

A selected number of special breads, offered for their protein content in different parts of the country, were examined recently in our laboratory for protein quality and quantity (Table 1). The nitrogen content ranged from 1.3 to 1.9 times that of a standard white bread. Only 8 of 17 samples, one of which was an experimental loaf containing 25 per cent milk solids, had 1.5 times or more the nitrogen content of the standard product. The highest value for nitrogen was less than twice that of the standard bread. The protein quality was even more variable than the quantity, with values ranging from three-fourths to twice that for the standard loaf. Only 10 of 17 were 1.5 times as good and of these; 5 rated at least 1.85 as good in protein quality as the standard bread.

The increase in nitrogen content was not always accompanied by an increase in protein quality. For example, one bread had almost twice the nitrogen, but only three-fourths the protein quality of the standard bread. By the Canadian scoring system, the protein ratings varied from 12.0 to 39.6, so that in Canada none of these breads would rate as an excellent source of protein. Eight of the 17 samples rated under 20 and would be classed as poor sources.

It is apparent that claims and label declarations with respect to protein have little meaning. The consumer who is being subjected to a barrage of advertising as to the importance of protein in his diet is unable to evaluate from the information available to him on the label the nutritional contribution he may expect from any particular product.

It has been proposed that a standard of identity promulgated under the Food, Drug, and Cosmetic Act for high-protein breads would be a practical way to bring some uniformity into the composition and labeling of such products. However, we must seriously consider whether such an action would "promote honesty and fair dealing in the interests of consumers" in supporting the implication that standard enriched white bread is an inferior food.

Another approach is through regulations under Section 403(j) of the Food, Drug, and Cosmetic Act. This section reads: "A food shall be deemed to be misbranded if it purports to be, or is represented for special dietary uses, unless its label bears such information concerning its vitamin, mineral and other dietary properties as the Secretary determines to be, and by regulations prescribes as, necessary in order fully to inform purchasers as to its value for such uses."

Can we achieve a truthful and informative label by requiring that, in addition to declaring the protein content, the label shall also declare that the usual serving or daily intake will provide the protein equivalent of "x" amount of whole egg when consumed with average meals, and of "y" amount of whole egg when eaten alone? For example, according to Agriculture Handbook No. 8(3), one medium egg has 6.1 gm. protein. Eight slices of standard bread will provide 16 gm. protein. As part of a diet containing milk, meat, cheese, and so on, this is the equivalent of 2.6 eggs. When eaten alone, 16 gm. protein from standard bread is equivalent to 0.7 of an egg (or 2.3 oz. of lean beef vs. 0.6 oz., or 1.9 cups of milk vs. 0.5 cup).

These are some of the approaches to the problem of regulating the labeling of foods for which representations are made concerning their value as sources of protein. The American consumer has been sensitized to the word "protein" through many media of advertising. He cannot be expected to understand its complexity. We realize the importance of developing the kind of label that will enable

him better to evaluate the worth of a product he is buying because of its protein content. The problem of more informative labeling is being studied in the Food and Drug Administration.

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BIOGRAPHICAL NOTES FROM THE HISTORY OF NUTRITION

Ignatz Leo Nascher—October 11, 1863–December 25, 1944

The problem of geriatrics is as old as Methuselah; but the scientific study of geriatrics and the name itself are comparatively new. The term was coined by Ignatz Nascher in 1909 from the Greek *geron*, old man, and *iatrikos*, medical care.

Nascher's interest in the older age group began as a medical student when he was told that nothing could be done for an elderly woman; it was just old age. His interest was aroused, and he never gave up his efforts to have special study given to the needs and medical care of old people. In 1912, he gave the first lecture in geriatrics at Bennett Medical College (later the Medical Department of Loyola University, Chicago). This was followed by other lectures and many articles on geriatrics. *Geriatrics, the Diseases of Old Age and Their Treatment* by Nascher was published in 1914 and was the first modern textbook on the subject. In June 1915, the New York Geriatric Society was founded with Nascher as secretary. This society remained active until World War II. The American Geriatric Society was founded in Atlantic City in 1942, and Nascher was made honorary president. The second meeting of the new society in 1944 was dedicated to Dr. Nascher and though he was then eighty years of age, he took an active part and read a paper.

Today there is a journal of geriatrics, but back in 1916 the *Medical Review of Reviews* introduced a department of geriatrics, the first of its kind. Later that year, the *Interstate Medical Journal* also started a similar department. Nascher was editor of both departments.

Ignatz Leo Nascher was born in Vienna, the son of Adolf and Ernestine Sternkicht Nascher on October 11, 1863. The family came to New York when Ignatz was six months of age. He was educated in the public schools of New York City. He took his degree in 1882 from the New York College of Pharmacy and then graduated in medicine (1885) from New York School of Medicine. He practiced medicine in nearly every section of New York City. Financially his practice was not a success because he frequently accepted no fee and even gave money to his patients who were poor and in need. In 1916, he accepted a position in the Public Welfare Department of New York. Always his sympathies and efforts were for the poor and underprivileged. New York was his city, and he probably knew every nook and corner of it; he was at one time editor of a guide book for the city.

Nascher's hobbies were travel and stamp collecting. He made some twenty-eight trips to Europe, Asia, and South America, always travelling on a minimum of money and being more interested in the way people lived than in the usual tourist attractions.

Nascher's friends said of him that "a kinder man never lived." He certainly seemed to make Browning's words his life's goal: "Grow old along with me! The best is yet to be. . ." He has been called the father of geriatrics, and he wrote some sixty-nine articles in medical journals, fifty of them being on geriatrics.

For some years Nascher suffered from a heart condition, the attacks becoming more frequent in his last years. He died on Christmas day, 1944.

Recognition of the importance of geriatrics has naturally meant an increasing interest in the nutritional needs of older age groups. Research is now active on this subject but much yet remains to be learned.

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Ascorbic Acid Retention and Color Differences

Effect of Cooking Method on Vegetables[1]

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ASCORBIC ACID retention in vegetables remains an important criterion in choosing cooking methods for vegetables, since surveys have shown that many American dietaries still fail to meet the recommended allowances for ascorbic acid (1). Earlier reports of ascorbic acid retentions in green beans and cabbage (2, 3) have shown, however, rather large variations both among replicate series of cookings for the same vegetable and among different vegetables cooked by the same method.

Thus, they have emphasized the need for more than one series of cookings on a number of vegetables if general conclusions are to be drawn. Accordingly, in this study results from at least four cookings for each of eleven different vegetables have been combined in a single statistical analysis to answer the following questions: (a) Are there differences, for the vegetables as a group, in ascorbic acid retention in samples cooked in boiling water and in steam; also in samples cooked by various steaming methods? (b) Are there differences within a cooking method in the response of the various vegetables? To obtain a broad array of vegetables, results previously reported by Noble and Hanig (4) have been included.

Color is also an important factor in the choice of cooking methods, particularly in green vegetables. Studies of green beans and cabbage (2, 3) have shown that boiling water and pressure saucepan methods generally result in satisfactory retention of green color. Consequently, studies of color differences were extended to several of the vegetables included in the studies of ascorbic acid retention.

Method

Most of the vegetables were purchased through regular market sources. Wax beans (Unrivalled variety) and squash (Green Gold variety), however, were grown under the supervision of the Horticulture Department on University plots. Vegetables were processed as soon as possible after they were brought into the laboratory.

Sampling was done in such a way as to insure as uniform portions as possible while maintaining a preparation typical of the particular vegetable. For example, wax beans and asparagus were divided according to size and general appearance into as many similar lots as needed. The beans were then broken into 1- to 1½-in. lengths, and the asparagus spears trimmed to a 6-in. length. Onions were quartered, a thin slice removed from each quarter for the raw sample, and the quarters distributed among the four methods of cooking. Peas were shelled and thoroughly mixed before sampling. Turnips and rutabagas were cut into ¾- to 1-in. cubes and mixed before sampling.

Sufficient vegetable was cooked in each case to yield a four-serving portion. Cooking methods were those described by Halliday and Noble (5). Cooking times were such as to obtain equal tenderness for all samples.

Samples for ascorbic acid analysis were blended with four parts of 3 per cent metaphosphoric acid or, in the case of broccoli, Brussels sprouts, and wax beans, series c, with 1 per cent oxalic acid. Ascorbic acid was determined by the Morell method (6) except that the Bessey (7) correction for color and turbidity was retained.

Color was determined by the Nickerson whirling disc method (8).

Percentage retentions of ascorbic acid in the various vegetables were combined into a single analysis of variance, since Bartlett's test for homogeneity of error variances (9) indicated the latter were sufficiently homogeneous to justify doing so. In the analysis of variance, the degrees of freedom for cooking methods were subdivided into single

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TABLE 1 **Ascorbic acid in raw vegetables and percentage retention after cooking**

VEGETABLE	ASCORBIC ACID									
	In raw vegetable		Retention in cooked vegetable				Retention in cooked vegetable plus cooking water			
	Mean	Standard error	Boiling water	Pressure saucepan	Tightly covered saucepan	Steamer	Boiling water	Pressure saucepan	Tightly covered saucepan	Steamer
	mg./100 gm.	*mg./100 gm.*	%	%	%	%	%	%	%	%
Asparagus	29.1	1.21	43	80	71	78	68	88	80	86
Wax beans*										
Series a	24.8	1.53	45	65	56	75	73	66	59	75
Series b	25.6	2.45	57	66	68	76	75	67	69	76
Series c	22.1	0.44	63	86	45	78	73	92	53	83
Broccoli	123.0	9.13	33	82	67	79	96	89	72	82
Brussels sprouts	88.4	6.76	35	84	71	86	84	88	75	88
Cauliflower	52.2	6.16	37	70	55	71	93	78	58	75
Onions	16.3	2.14	36	53	68	67	93	80	87	94
Peas*										
Series a	27.1	1.06	44	64	66	67	82	75	73	81
Series b	30.4	3.76	46	70	70	71	77	78	74	79
Series c	23.1	1.79	48	73	71	66	76	81	80	77
Rutabagas	36.1	9.09	36	65	59	65	75	71	66	73
Spinach	90.2	1.38	45	78	63	64	84	93	77	76
Squash	16.2	1.19	60	64	71	76	82	73	76	87
Turnips	24.7	1.12	45	63	65	61	74	71	70	69

*Each series came from a different year's harvest and contained four replications.

degrees of freedom to test the significance of the following comparisons: boiling water vs. steaming methods; pressure saucepan vs. tightly covered saucepan and steamer; and tightly covered saucepan vs. steamer. In addition, as an aid in interpreting the significant interaction of cooking methods with vegetables, the mean retentions within each cooking method were separated into non-heterogeneous groups by the Student-Newman-Keuls (SNK) test (10).

Results

The ascorbic acid contents of the vegetables are given in Table 1. They ranged from a little over 16 mg. per 100 gm. in squash and onions to 123 mg. per 100 gm. in broccoli. Nevertheless, for most of the vegetables, the values were similar to those reported by Watt and Merrill (11). The value for cauliflower, however, was somewhat lower, and for spinach somewhat higher than reported by these workers.

The standard errors of the mean contents are also given in Table 1. Their magnitude and variability indicated that the raw samples of most of the vegetables varied among themselves considerably in their ascorbic acid content, but that the extent of variation was different for different vegetables. Thus they demonstrated the need for several samples to serve as a basis for inferences about the ascorbic acid content of the raw sample.

The mean percentage retentions of ascorbic acid in vegetables cooked by different methods, also summarized in Table 1, were significantly different when the group of vegetables was considered as a whole. That for the boiling water method (45 per cent of the original content) was significantly smaller than the average retention for the three steaming methods (69 per cent of the original content). A similar pattern has been reported for green beans and cabbage (2, 3) and for each of the vegetables studied by Noble and Hanig (4).

This comparison accounted for a relatively large part of the total variation due to cooking methods, but, even so, comparisons of retentions in the various steaming methods are also of interest. For example, that for the tightly covered saucepan method (64 per cent of the original content) was significantly smaller than for the steamer method (72 per cent). That for the pressure saucepan method which uses short cooking periods at high temperatures was not significantly different from the average retention in the other two steaming methods which use longer cooking periods at lower temperatures.

In addition to the differences found when the vegetables were considered together as a group, differences in the response of individual vegetables to any particular cooking method can be seen in Table 2 in which the retentions are separated into groups. Those not significantly different are side-scored by the same line.

It is apparent that the vegetables in the various groups are not the same for different cooking methods. Thus, of the group showing the highest retention in boiling water, only wax beans c are

TABLE 2 Mean ascorbic acid retention for vegetables cooked by different methods, separated into non-heterogeneous groups, according to SNK test (10)

VEGETABLE	Retention	GROUP LINES*
Cooked in Boiling Water		
	%	
Wax beans, Series c	63	
Squash	60	
Wax beans, Series b	57	
Peas		
Series c	48	
Series b	46	
Wax beans, Series a	45	
Turnips	45	
Spinach	45	
Peas, Series a	44	
Asparagus	43	
Cauliflower	37	
Onions	36	
Rutabagas	36	
Brussels sprouts	35	
Broccoli	33	
Cooked in Pressure Saucepan		
Wax beans, Series c	86	
Brussels sprouts	84	
Broccoli	82	
Asparagus	80	
Spinach	78	
Peas, Series c	73	
Cauliflower	70	
Peas, Series b	70	
Wax beans, Series b	66	
Rutabagas	65	
Wax beans, Series a	65	
Squash	64	
Peas, Series a	64	
Turnips	63	
Onions	53	
Cooked in Tightly Covered Saucepan		
Peas, Series c	71	
Brussels sprouts	71	
Asparagus	71	
Squash	71	
Peas, Series b	70	
Was beans, Series b	68	
Onions	68	
Broccoli	67	
Peas, Series a	66	
Turnips	65	
Spinach	63	
Rutabagas	59	
Wax beans, Series a	56	
Cauliflower	55	
Wax beans, Series c	45	

*Any two means not included within the limits of the same line are considered significantly different. Shortest significant range for 15 means = 15.8; for 2 means = 9.0.

TABLE 2—*Concluded.*

VEGETABLE	Retention	GROUP LINES*
Cooked in Steamer		
Brussels sprouts	86	
Broccoli	79	
Wax beans, Series c	78	
Asparagus	78	
Squash	76	
Wax beans		
Series b	76	
Series a	75	
Cauliflower	71	
Peas, Series b	71	
Onions	67	
Peas		
Series a	67	
Series c	66	
Rutabagas	66	
Spinach	64	
Turnips	61	

in the highest group for the pressure saucepan, and squash and wax beans b in the highest group for the tightly covered saucepan; all are in the highest group for the steamer, but so are over half of the vegetables studied. In addition, many of the vegetables within any of the cooking methods show retentions which overlap two or more SNK groups.

As a consequence of these variations, the magnitude of the differences obtained when any two cooking methods are compared for a particular vegetable will depend on which vegetable is chosen for the comparison. Furthermore, the ascorbic acid content of typical servings of vegetables prepared by different methods will reflect these differences as well as differences in the original content of the raw vegetable.

Two somewhat extreme cases from vegetables used in this study will illustrate this point. Single ½-cup servings of the broccoli (75 gm.) cooked in boiling water and in the pressure saucepan would supply 41 and 101 per cent, respectively, of the recommended allowance for the adult male, whereas single servings of the squash (120 gm.) cooked by these methods would supply only 16 and 17 per cent, respectively, of the allowance. Thus, some vegetables cooked in boiling water, although retaining less ascorbic acid than when cooked by one of the steaming methods, will contain more ascorbic acid than other vegetables cooked by the method yielding the highest retention for that vegetable.

In contrast to the results for the vegetables alone, the percentage retentions were essentially the same in the combined vegetables and cooking waters from the boiling water, pressure saucepan, and steamer methods and averaged 80 per cent of the original content. They were significantly greater, however, than that for the tightly covered saucepan, which averaged 71 per cent of the original content.

A part of the original ascorbic acid content which is not accounted for in either the cooked or cooking water samples might be present as dehydroascorbic acid and not be included in the values reported here since they were obtained by the indophenol method. That this is probably not the case is shown by the report of Noble and Hanig (4) who, using the

TABLE 3 Hue of vegetables, raw and cooked by different methods

VEGETABLE	HUE*				
	Raw	Cooked			
		Boiling water	Pressure saucepan	Tightly covered saucepan	Steamer
Asparagus	32.0	31.3	34.5	32.2	32.4
Wax beans	35.0	30.4	30.4	30.2	30.4
Broccoli	37.4	37.5	36.6	28.3	31.1
Brussels sprouts	34.0	35.7	34.5	31.4	31.2
Peas	38.1	36.1	40.0	34.2	33.9

*According to the Munsell notation: values between 40 and 35 represent gradations of green toward yellow-green; 35 to 31, gradations of yellow-green toward yellow; and 30 to 25 represent yellow.

2,4-dinitrophenylhydrazine method, reported values for dehydroascorbic acid in cauliflower, spinach leaves, rutabagas, peas, and asparagus which, except for cauliflower, did not exceed 10 per cent of the total ascorbic acid content of either the vegetable or cooking water. Since such determinations in unoxidized vegetable extracts or cooking waters may include non-ascorbic acid components (12), these values would tend to err in the direction of over- rather than underestimating the amount of dehydroascorbic acid. Unresolved, however, is the site of the destruction of ascorbic acid—whether it occurs primarily in the vegetable or cooking water.

The hues of raw vegetables and vegetables cooked in different ways are shown in Table 3. Hues of broccoli, Brussels sprouts, and peas cooked in either boiling water or the pressure saucepan were greener than for samples cooked in the steamer or tightly covered pan and almost as green as, or greener than that of the raw. Hues of the cabbage and green beans previously studied (2, 3) also followed this pattern. The color of asparagus cooked in the pressure saucepan was also greener than in the other two steaming methods, but that in boiling water was less green than in any of the steaming methods. Wax beans were in the yellow range and not particularly affected by changes in cooking method.

Summary

Data for ascorbic acid retention in a representative group of vegetables were analyzed to determine whether any general trends existed in the effect of different cooking methods on such retentions. Color differences were also studied.

For the vegetables as a whole, the percentage retention in the boiling water method, 45 per cent of the original content, was significantly smaller than in the steaming methods, 69 per cent. Within the steaming methods, that in the pressure saucepan method, which uses short cooking times but high temperatures, was not significantly different from the average retention in the other two methods which use longer cooking times but lower temperatures. Within each cooking method, however, the different vegetables retained varying amounts of ascorbic acid. The nutritional significance of such variations was discussed.

The color of all of the green vegetables except asparagus was greener when cooked in boiling water or pressure saucepan than in a tightly covered saucepan or steamer. That of asparagus cooked in boiling water, however, was less green than in any of the steaming methods.

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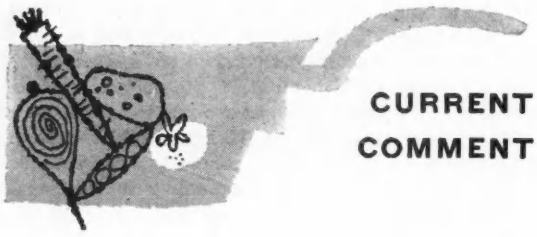
Old-Fashioned vs. Mix Cakes

Cakes baked from commercial mixes had significantly better texture and were more tender than cakes made from individual ingredients in a recent study by Arvilla Fliginger, Kansas State University graduate student in foods and nutrition. The cost of the two types of cake was identical—37 cents each (assuming that the homemaker would use the leftover egg yolks). It took considerably longer to prepare the "home-made" cake.



CURRENT COMMENT

Silver Tableware Through the Ages

FRANCES BERKELEY FLOORE
The Carolina Inn
Chapel Hill, North Carolina

THE NAME of the first person to use a pronged twig to carry food to his mouth has been lost in the pages of time, but he did much to turn eating into dining. We take for granted the implements used for setting the table, but their history is as interesting as any phase of the art of cooking which they aid us in enjoying.

Spoons

Spoons hold a special place in the hearts of collectors who devote a life-time of study and research in ferreting out old masterpieces.

In the Paleolithic Age, the spoon may have had its crude beginning; certainly its use is much older than the knife and fork. The first spoons were probably shells used for dipping hot food. Handles made of horns from animals were added later. In time, shells were replaced by spoons made of wood. Indeed, the word "spoon" comes from the old English *spon* meaning "chip of wood." In the Middle Ages, spoons were made of horn, bone, iron, and crystal, as well as of wood.

The first mention of a spoon made of precious metal is found in the Bible, wherein the Lord said to Moses: "And thou shalt make the dishes thereof, and spoons thereof, and covers thereof, and bowls thereof, to cover withal: of pure gold shalt thou make them" (Exodus 25:29).

Though the artist had little opportunity to display his skill in designing a spoon, more silver spoons have survived the melting pot and the ravages of time than any other form of plate. One reason perhaps is the sentimental attachment of the spoon. Until the seventeenth century, it was the custom to give a child a baptism spoon which he kept during his lifetime and then willed to his next of kin at death. References to spoons go back as far as 1250 in English wills. They were not only bequeathed to relatives and friends, but to colleges and churches, showing the high regard in which the spoon was held.

FORM OF SPOONS

Medieval spoons had long, narrow handles with pear-shaped, flat bowls. Since the bowl would not hold liquid, we may assume that such spoons were used for puddings and thick foods. As a matter of fact, a bowl-shaped spoon was not needed at that time, because tea and coffee had not then been introduced. For two hundred and fifty years after the first silver spoons were made, there was little variation in the shape, although ornamentation was added.

The "knop" at the top of the stem helps to determine the period in which a spoon was made. The earliest was the acorn top, followed in the sixteen and seventeenth centuries by the diamond top and heads of women with various coiffeurs. At the time of Charles the First, the knop was discarded, the bowls took on their present egg shape, and the stems broadened. After the Restoration in 1660, the stem was flattened and a triangular tongue, known as the "rat-tail," was added to the back of the spoon for strength.

There was great variation in the manner of engraving, and the bowls were often ornamented with shells, scrolls, and foliation.

The first teaspoons (as opposed to tablespoons) were introduced in the seventeenth century and were the size of present after-dinner coffee spoons. By the time of George the First, they had taken on the size in use today.

PEWTER SPOONS

Pewter has been widely used for spoons through the ages. During the Roman occupation of England, it was the universal metal, and in the Orient it became an extremely ornamental as well as useful one. There are not many pewter spoons left, as they were soft and required rather frequent melting and remolding. Even with the "rat-tail" back, they were not very durable. This makes it all the more surprising that a pewter spoon found in 1905 in the mud of the Thames River was still in good condition. It has the head of a woman with a head dress worn at the time of Henry V, which dates it at about 1413 to 1422. Three more spoons of this period are known.

To form pewter, only molds and a lathe, none of which was costly or intricate, were needed. A boy, known as a "turn-wheel," turned the lathe. In both England and France, there was more pewter than silver, and pewter workmen were classed as "hollow-ware" men, that is, those who made utensils for liquids; "sad-ware" men, who made plates; and "trifflers," who made spoons, salts, and beggars' tokens. The demand for pewter spoons crowded out those made of wood or horn.

The best quality of early pewter was made of four parts tin with one part brass or copper. Often lead replaced the brass, but the quality was not as good.

It was such pewter that served as the raw material for bullets in our Revolutionary days.

In this country, one of the colonist's annual duties was to mold a fresh supply of spoons for family use. These were made of pewter or soft metal and broke easily. Molds for making the spoons were scarce and often only one family in a town had a molding set.

SPOONS OF NOTE

Probably everyone is acquainted with the "Puritan spoons" of England that became common in the seventeenth century. They are free of ornamentation or decoration (except for an occasional initial) and have flat handles. They derived their name from the Puritans or Roundheads, so called because they cut their hair short, as opposed to the Cavaliers who wore ringlets. The beauty of these spoons lies in their gloss and the blue patina of the silver.

Another unusual spoon, dated 1592, came from Genoa and is now in the British Museum. It is an early combination spoon and fork. The moon-shaped bowl had no handle and is about the size of a silver dollar. When the spoon was to be used, the prongs of the fork slipped into loops at the back of the bowl and made a handle. It was probably used for travel.

The English coronation spoon, preserved with the crown jewels, is one of two pieces dating from the twelfth century. A lifetime of seven hundred years is a long span for a spoon, and this one was re-fashioned as far back as 1660.

Apostle spoons made during the Tudor Period are dear to the collector's heart. They come in sets of twelve, each with a knop which took the form of one of the disciples, plus a master spoon with the figure of Christ. The apostles can be identified by their trade or manner of meeting death. Matthew, a tax collector, has three purses or a wallet; Philip carries a sword and three loaves of bread; Bartholomew has a flaying knife because he was flayed and beheaded; John, a chalice with a winged serpent, alluding to his driving out the devil from a poisoned cup; James the Great, three scallop shells and a pilgrim's staff, symbolic of his missionary work. Andrew is represented with a saltier cross, on which he is supposed to have been crucified in Greece. James the Less has a saw placed vertically with a handle above as tradition has him thrown from the top of the temple in his ninety-sixth year and then his body was "sawn asunder." Thomas has a carpenter's square and verticle sphere; Peter, the keys of Heaven and sometimes a fish; Matthias, an axe as he was a woodsman; Jude, a club, a lance, or a saw; Simon, a saw; and Paul, a sword. On the master spoon, Christ carries an orb and a cross and his hands are raised in blessing. In some sets, Luke replaces Matthias, and in others, Judas takes the place of one of the others. The apostles carry books and often an eagle in many of the sets.

Such spoons today are very rare; not long ago, a set dated 1536 was sold at auction for $25,000 to the J. Pierpont Morgan collection. Queen Elizabeth II has a dazzling collection of antique silver inherited and received as wedding gifts which includes six apostle spoons—the oldest dating from 1640 to 1660.

Knives

The origin of the knife can be traced to prehistoric times. The earliest ones were hardly more than pieces of flint; later, they were made of stone, bronze, steel, iron, wood, silver, and gold. In the Middle Ages, the ordinary citizen carried at his girdle a knife which could be used equally well for carving food or for cutting an enemy's throat. The knife at first was used for protection or to kill wild game; only much later did it become a part of the table setting.

Before the table knife came into use, the person held his food on his plate with his fingers and cut it with his hunting knife. There were always finger bowls, called ewers and basins, on the tables. These began to disappear after the knife and fork became a part of the table setting. Chaucer, who died in 1400, spoke of a "Sheffield Whittle," which was the English term for knife. Thus it may be assumed that table knives were in use at that time in England.

From the middle of the sixteenth century we find sets of knives containing a dozen knives with only one fork. Apparently, the fork was used only for carrying food from a serving dish to one's plate, not for conveying it to the mouth.

Royalty in the Middle Ages invested service in the dining room with much ceremony. The "squire carver," or "ecuyer trenchant," would carry into the dining hall a leather case with two large knives for cutting bread and meat, together with smaller knives for the lord's use at the table.

Later, a different type of knife, the *presentoir*, or serving knife was introduced. It had a broad blade with a square instead of pointed end and was used to place meat on the guest's plate.

Knives with pointed blades were often used as tooth picks. In France, the fashion of the rounded blade was started by Cardinal Richelieu. According to Tallement des Reaux, the Chancellor often dined with the Cardinal to discuss matters of state. The Cardinal objected to the Chancellor's habit of picking his teeth with his knife. In a round-about way, Richelieu corrected the matter by having the knives ground down at the end and inadvertently started a new trend in the shape of knife blades.

Highly decorative grace knives, used in Italy in the last half of the sixteenth century, were made in sets with specially broad blades on which were etched the various parts of the graces to be sung

before and after meals. They were useful as music sheets as well as implements for eating and must have served as "conversation pieces." On the blade of one beautiful knife is inscribed the music of the first tenor's part and the titles and words of the two graces.

A German carving set dated "the tenth of October, 1862" also illustrates the manner in which blades came into use as the vehicle for artists' work. The knife of this set has a blade covered with flowers and inscriptions, while its inlaid ivory handle is inscribed "Work and Pray" in both Latin and German.

The shapes of the blades fitted to the various silver handles during the seventeenth and eighteenth centuries can be traced to the early flint instruments of prehistoric times. When silver blades were introduced later, the first ones were hall marked on the handles. In the George III era (1760-1820), dessert knives were introduced with silver blades and ivory handles. Sometimes the ivory was colored to add to its beauty; today a complete set is practically nonexistent—a true collector's item.

HANDLES OF BEAUTY

The early part of the fourteenth century found the handles of knives being colored according to the festivals of the church. Samples of such work may be found in museums, where we may admire and appraise the exquisite workmanship. The saying, "they builded better than they knew," would appear to be most appropriate for these priceless works of art.

There were ebony handles to be used in Lent and ivory ones for Easter; for Whitsun, the handles were black and white checkered. In the Victoria and Albert Museum in London may be seen French knives dated 1623 that may well have been used during the feast of the Pentecost. They have handles of dark horn checkered with mother of pearl and blades etched with the figure of the Virgin.

Judging from the specimens in museums, the most fashionable material for handles was ivory. These were engraved with the figures of kings, warriors, animals, children, and Biblical characters. One English set of knives, dated 1607, has ivory-carved handles with knops of kings from Henry the First to James the First. The ivory crowns on their heads are set with precious jewels, and they are lovely to behold.

The Dutch made exquisite handles with Madonna and Child in ivory, while other artists often used the figures of Adam and Eve, as well as modern figures clothed in the mode of the day.

Amber was often used in Germany, and one of the finest sets consists of twelve knives and one fork, the handles of which are decorated with plaques of amber over foil, painted with the figure of Christ and the apostles on one side and the Apostle's Creed inscribed on the other. The artist proudly affixed his name, "Leonarus Marins 1634." From seventeenth century Germany also come knives with delicate rock crystal handles cut in patterns of varying shapes which certainly would never have withstood twentieth century dish machines; they were, in fact, almost too fragile for table use.

Porcelain, including the fragile and delicate porcelain of China, became popular in the eighteenth century for handles of knives and forks.

In Crete, in the seventeenth century, knives of ivory with silver filigree mounts encased in silver sheaths with niello and chased decoration were popular. Today, Cretan ornamental pins to be worn on suits or dresses are available which are miniature replicas of such knives.

Forks

Historians argue over whether the pronged twig or the arrow served as the first implement to be used to pierce food and convey it to the mouth.

A two-pronged fork with a flat handle, hallmarked 1632, is the oldest specimen known and may be seen in the Victoria and Albert Museum. However, the first mention of a fork being used at table was in the eleventh century when the wife of the Italian doge was referred to as using a small, golden fork described as "luxurious beyond belief." The first forks were small, two-pronged affairs, rather similar to the present-day French snail fork.

The earliest reference to the fork in a will is found in a testament written in 1463 bequeathing a "silver fork for green ginger" to a relative.

Early forks were crudely wrought pieces of silver with two prongs at one end and a spoon at the other. Guests always carried their own silver when they travelled because inns and homes did not provide them. To take up as little space as possible, they were made to fold, and the handles to interlock and fit in a small leather case. A set included a knife, fork, and spoon, plus a toothpick, although the spoon and fork were usually one piece.

Probably the earliest reference to the use of a knife and fork together is that of Thomas Coryat, an Englishman, in his book, published in 1611, *Coryat's Crudities Hastily Gobbled up in Five Months Travels in France, Savoy, Italy, etc.* He states: "I observed a custom in all those Italian cities and towns through which I passed, that is not in use in other countries. Neither do I think that any other nation of Christendom doth use it, but only Italy. The Italians do always use a little fork when they cut their meat . . . the forks being made for the most part of iron or steel, and some of silver, but these are only used by gentlemen. The reason for this is because the Italian cannot endure by any means to have his dish touched by fingers, seeing that all men's fingers are not alike clean . . ."

Even after forks became popular, rich people

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did not have many of them. Someone has suggested that the custom of serving a sherbet or ice in the middle of a meal may have been to allow the servants time to wash the forks for the next course.

The word "fork" evidently comes from the Latin *furcifer,* which means yoke- or gallows-bearer. The tines of a two-pronged fork with a handle resemble a gallows.

Pepys' diary indicated that forks were not in general use during his time. His entry of September 29, 1663, states: "Went to Guild Hall and met . . . a City Commander . . . Many were the tables, but none in the Hall but the Mayors and the Lords of the Privy Council had napkins or knives, which was very strange." In 1664, he wrote: "God having given me some profit extraordinary of late; and bespoke also some plate, spoons, and forks, I pray God to keep me from too great expense, though these will be pretty good money." As Pepys was a leader in fashion, his having silver plate does not mean it was in general use.

Many of the nobility continued to eat with their fingers even after the introduction of forks. In England, where they loved luxury and ceremony, they were slow to accept the fork. It is possible, too, that the clergy may have retarded the use of forks as they contended it was an insult to God not to touch meat with one's fingers. It was not until the latter part of the eighteenth century that forks came into common use.

Although the knife and fork became popular in Italy earlier than in other countries, the idea did not seem to "catch on" elsewhere in Europe for some time. The fact that there are so many references to ceremonial washing of hands before and after meals would lead us to believe that the fork was not generally used in Europe before the latter part of the sixteenth century.

In fact, in 1541, Bishop Benevento wrote: "The washing of hands is one of those things that should be done in one's chamber and not in public. Nevertheless, when a man is invited out and is about to take a seat at the table, he should wash his hands in the presence of the guests, even though those that dip their hands with him have no doubt as to their being clean." One Oriental dignitary invited to dine with an Englishman was given a fork for eating. "No," he said, "this fork may have been in hundreds of mouths before mine, and among them possibly that of mine enemy. The idea is repugnant to me."

Silversmithing

Of all the precious metals, silver has been the most popular for flatware and plate. It was called "Luna" and "Diana" by the alchemists, who assigned to it the symbol of the crescent moon. Silver in the massive state is the whitest of all metals, has a beautiful metallic luster, and next to gold, is the most malleable: 1 gm. pure silver can be drawn into wire considerably more than 1 mi. long, and it can be beaten into leaves 0.00025 mm. thick.

Silversmithing and goldsmithing constituted one art, the craftsmen being proficient in either metal, and their art has always attracted the finest craftsmen in the world. Because the metal was costly, only proficient artists could afford to work with it. Thus, it was that the early craftsmen found self-expression in turning out beautiful pieces, which we now admire in museums.

The English liked the luxury of silver, even though they may not have accepted the knife and fork too readily, and the connoisseur of old silver should study the history of English silver, for in that country more fine silver has been produced than in any other. It is there that standards and practices were developed which influenced all other producers.

In 1300, a group of Germans who had immigrated to England were asked to purify and refine some silver for making coins. They called themselves the "Easterlings" from their locality; shortly thereafter, the first two letters were dropped to form the new world "sterling." Its connotation has come to mean quality in silver as well as quality in character.

Laws to Protect Old Silver

The long War of the Roses resulted in many magnificent pieces being melted down, and secular plate from this period is today practically nonexistent. The treasured pieces in the abbeys had a similar fate during the Reformation, but the loss was due to pillage and destruction. If a piece dating before 1600 is offered for sale today, it is apt to bring an extremely high price.

Many of these beautiful works of art had been made from silver coin, which resulted in a scarcity of coins. To prevent this shortage, the Act of 1696 fixed the standard for plate above that of silver coinage. The mint had offered a high price for all pieces of plate, and large quantities were turned in, to be melted down to ore. There was a penalty for fraudulently marking inferior silver with the sterling mark, and in two instances this was punished by death. As soon as the government punished the offenders, it destroyed their wares so that practically no forged silver is found in Great Britain from early times to the present.

It would take volumes to give a history of the early legislation, as many detailed laws were passed. The year 1180 saw the first mention of a guild, but it was voluntary and there were few laws to protect it. As early as 1238, there were inferior silversmiths who produced silver pieces of a lower standard than coins, but sold them for the same price as those of the correct alloy. Henry III had the mayor of London appoint six goldsmiths to supervise their

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craft. They were known as "gardiens" and in 1300 were authorized to determine if the proportion of silver and alloy was up to specification.

In 1327, a royal charter incorporated the Guild of London Goldsmiths. Their most important legislation was to require every smith to use a hallmark of his own.

A statute passed in 1362 forbade a goldsmith to work silver or gold into a wrought article unless he used an alloy of sterling.

Marks Identifying Quality

Any research student of today may trace the geneology of a piece of silver made in England after 1300. The "leopard's head" hallmark was first used in 1300 and is the earliest known on English silver. Through an error in translating from the French, the name "leopard's head" was used although the figure was that of a lion. From 1478 until the era of George II, there was a crown over the leopard's head. After this, the head was smaller and through another error in interpreting the guild laws, the crown was removed.

The "maker's mark" followed the leopard's head. In 1363, master goldsmiths was ordered to impress their marks on each piece after it was assayed. As the majority of the population was illiterate at that time, the maker's marks were of crosses, flowers, hearts, animals, or other symbols. In the seventeenth century, this system was discontinued, and letters and initials were used. Such practice became a matter of law in 1739.

As early as 1500, "date letters" appeared, but the first mention of this is in 1470. In some cases, however, the dates signified the year a gift was given, which has caused some confusion to those trying to ascertain a correct date of production.

London silver made since 1544 has a "lion passant" as the official stamp. The sovereign's head is found on all plate assayed in England from 1784 to 1890; this signified the payment of duty by the silversmith to the crown. The mark is a head in profile of the reigning king or queen. With these marks, one is able to identify the place, year, and maker of all old silver.

Silver in Other Countries

The silversmith's trade flourished all over Europe, as well as in India and Asia.

In Scotland, the craftsmen led a nomadic life, moving from town to town and making small pieces as the thrifty Scots were not inclined to order whole sets of flatware at one time. Anyone wishing a piece of silver took his own metal to the itinerant smith. Much of the silver of that day was later melted down for political purposes and little remains today .

Danish silver can be characterized as being plain —of the everyday variety. The Danes have no silver dated prior to the thirteenth century. The Thirty Years War resulted in burying much of it, some of which has only recently been unearthed and has found its way into museums. Today the simplicity of the Danish silver is widely accepted, but in the days of silver craftsmen, the style was toward more ornate patterns than Denmark had to offer.

German silver, on the other hand, is known for its abundant detail and ornamentation, both in antique and modern. The museums have a great deal of German ecclesiastical plate, dating to the twelfth century. There were many standards of silver, and each piece was registered and marked accordingly. Most contemporary German silver is 800 fine, which is less than English or our sterling.

The finest collections of French silver are found, not in France, but in the possession of Britain's royal family. The royalty of England appreciated and purchased the delicately shaped and designed French pieces—for next to England, France was second in the artistry of its silversmithing. The French were the first by several centuries to further the craft of molding and designing precious metal. The earliest French silver dates from the time of the Roman invasion. The patron saint of the French goldsmiths was St. Eloi, who did much from 588 to 659 to promote the art.

The undisputed goldsmith of all time, of course, was the Italian, Benvenuto Cellini. Unfortunately, less than a dozen of his pieces still exist. His art was executed in hollow-ware rather than flatware. The Rospigliosi cup of gold and enamel is in the Metropolitan Museum and is worth a trip to New York to see. Italy suffered many losses in silver during invasions, and later craftsmen melted down the old pieces to remake them. In Italy, the Renaissance flowered, with Florence as the world's cultural center for art. There the silversmiths reigned supreme, with royalty from all over Europe sending them orders to be executed with precision and care.

Vast quantities of plate were made in Spain, and the Spanish Renaissance was next to the Italian in the magnificence of its expression. The defeat of the Armada in 1588, however, saw the beginning of the decline of the goldsmith's art in Spain. Marauding troops have always depleted a country of its art treasures, and Spain was no exception. Fortunately, the soldiers of France and England were of sufficient culture to recognize the value of the priceless collections they encountered and knew that what they had looted was more valuable in the original shape than if melted down. That is why France and England today have more examples of early Spanish silver than Spain herself.

In Russia, the silversmith's art dates from 966 to 1015. The Russians created practical pieces which were found no place else, yet they are not known for their originality. Most of the gorgeous pieces

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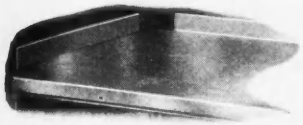

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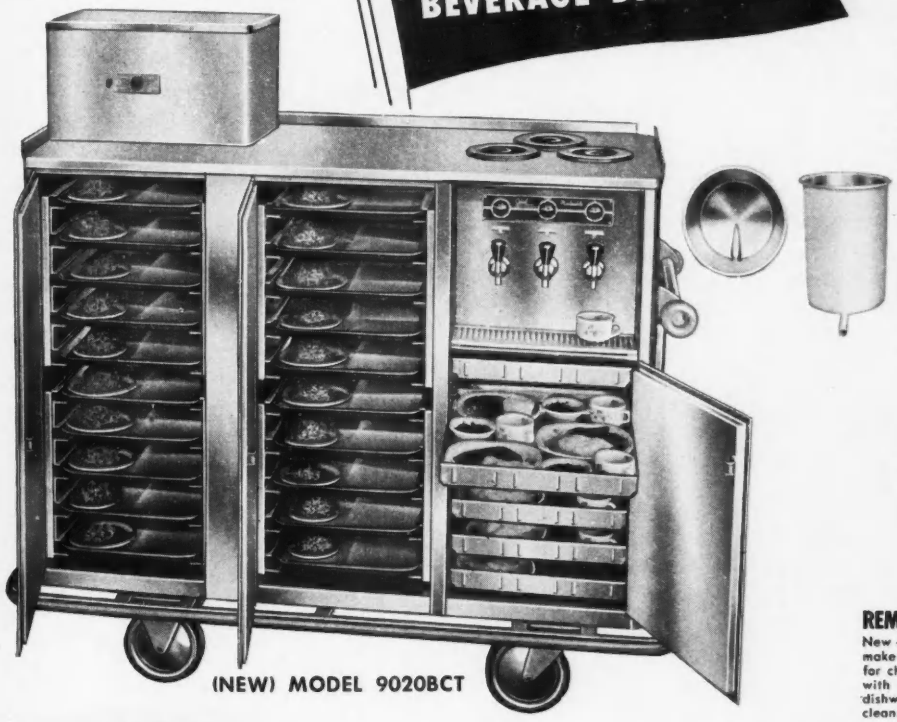

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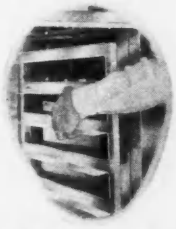

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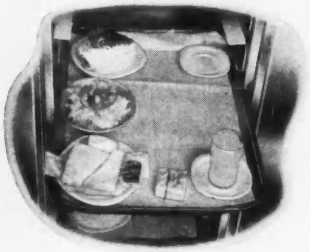

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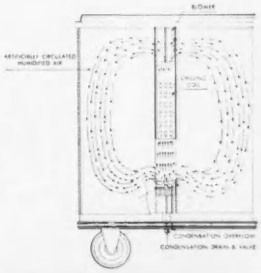

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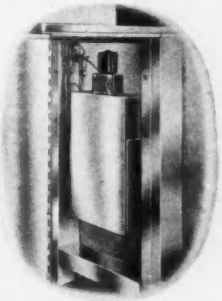

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in the Czars' palace were imported and made by foreign artists and were the envy of every visitor to the palace during the sixteenth and seventeenth centuries. They did produce a small brandy cup, known as a *charka,* which was introduced by them in 1800 and was original. They also discovered the process resulting in what is known as nielloware—a black enamel on silver—which became very popular and added to the interest of the silver and gold. Today, Thailand is noted as being the principal contemporaneous producer of nielloware.

Practically the only art to develop to a high degree in Ireland was silversmithing. The Irish melted Spanish dollars and impressed the word "dollar" on many pieces. Irish silver is avidly sought by collectors, although today few examples exist outside of museums.

Silver in America

The early American silversmiths were influenced by the austerity and simplicity of their lives, and they developed a purity of form which has become singularly American. It is interesting that even when they lacked all the luxuries of life and the problem of survival from day to day was hardly solved, the silversmiths of this country found a ready trade and were producing silver equal to that of any other in quality.

At first, before the early colonists had banks to protect their money, they took it to the silversmiths to have it melted down and patiently hammered into items of beauty to add color and character to their drab and simple lives. The silversmiths were greatly admired and respected.

John Hull became the master of all New England silversmiths, of which there were hundreds. In 1652, he was appointed the first master of the first mint in this country. At that time, the paper money had doubtful value, and with the establishment of the mint, the art of the silversmith was able to flourish. Jeremiah Dummer, who was apprenticed to Hull for eight years, later created lovely silver pieces worthy of his master's training.

Paul Revere, Jr., was the most famous American silversmith, and his work is almost indistinguishable from that of his father. Paul Revere's bowl is well known, displaying a degree of perfection seldom attained. It was ordered by the "Fifteen Sons of Liberty," and the inscription on the inside leaves no doubt as to their attitude: "To the Memory of the Glorious NINETY-TWO Members of the Honorable House of Representatives of the Massachusetts Bay, who, Undaunted by the Insolent Menaces of Villains in Power, from a strict Regard to Conscience and the LIBERTIES of their Constituents, on the 30th Day of June, 1768, voted NOT TO RESCIND."

No date letters were used on American silverware—only the maker's mark, which was usually his initial or full name.

One who is experienced in judging silver can estimate its age by its color. The continued oxidation of silver over the years mellows it and gives it a softness of texture and color known as patina. Silver that is stored away and only brought out for company loses its luster; in fact, one of the best polishers is everyday usage.

The trend from the beautiful to the utilitarian in silver is one that we evidently must accept as part of our present-day life. The machine age has invaded every phase of living and the hand work of the silversmith is no longer desired. With so much to do and so little time, the answer seems inevitably to be mass production. Stainless steel flatware seems to be gaining acceptance on some tables, although the discriminating still have an appreciation of sterling. Patterns are plainer, as is our architecture. As a matter of fact, the designs in silver and architecture seems to have gone hand in hand throughout the ages.

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Cheese Flavors

Almost all cheese flavors, it appears, are carried in the fat, according to reports by W. B. Thompson and F. M. Strong of the University of Wisconsin, who hung ground Cheddar cheese inside a cloth bag and collected the fat dripping in a surrounding plastic bag. The biochemists have recovered some of the flavors from the fat, but have not yet isolated pure individual chemical substances.

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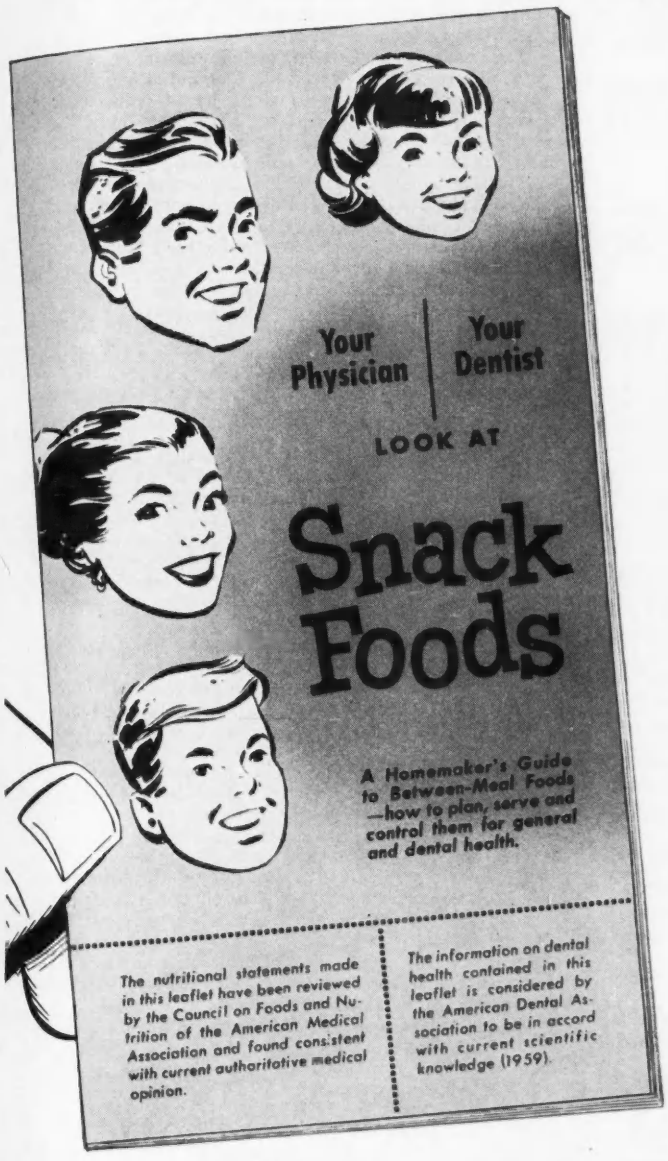
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A Homemaker's Guide to Between-Meal Foods —how to plan, serve and control them for general and dental health.
The nutritional statements made in this leaflet have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.
The information on dental health contained in this leaflet is considered by the American Dental Association to be in accord with current scientific knowledge (1959).

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"But . . . what about snacks?"

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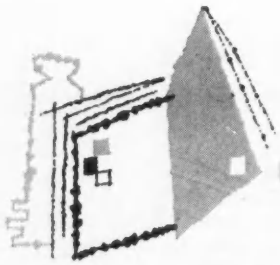

BOOK REVIEWS

Essentials of Pediatrics. 6th edition. By Philip C. Jeans, M.D., F. Howell Wright, M.D., and Florence G. Blake. Philadelphia: J. B. Lippincott Company, 1958. Cloth. Pp. 714. Price $6.

With the broadening scope and changing character of modern pediatric nursing, *Essentials of Pediatrics* was revised, rearranged, and rewritten in the sixth edition.

The increasing concern of today's nurse for a better understanding of her patient as an individual is reflected throughout this new edition. Through her understanding of behavior the nurse has countless opportunities to influence individual growth and to further satisfying family living. To do this well, she must be versed in the expected changes of personality growth and the effects which parental attitudes toward health and disease may bear upon it.

The efficiency of the book as a learning text has been heightened by reorganization. Unit I covers expected growth and development, including requirements for optimal nutrition. Unit II considers the kinds, the incidence, and the severity of diseases of children and preventive measures. Unit III treats the rudiments of nursing care, with attention to the interpersonal relationships of the nurse, as well as the physical care she must render. The last two units offer more detailed consideration of disease and special problems related to the nursing care of the sick infant and child. Unit IV considers infant nursing, while Unit V contains diseases which are more characteristic of the older child. Each chapter offers suggested readings for further study.

While this book has been planned for the nurse, the chapters on nutritional requirements and diet, breast feeding, artificial feeding, and digestive disorders of infancy provide much practical information to the dietitian and nutritionist working in a pediatric situation.

The authors are to be commended for the preparation of such a useful and readable text.—*Clara Karl, University of Chicago Clinics.*

Low-Fat Cookery. Revised edition. By Evelyn S. Stead and Gloria K. Warren. New York: McGraw-Hill Book Company, Inc., 1959. Cloth. Pp. 284. Price $4.50.

This book is predicated on the conviction that low-fat cookery is one way of answering today's need for keeping in step with the rapid advancements in human nutrition, weight control, and good health. While the medical thoughts (written by the authors' physician husbands) seemingly support this line of reasoning, some readers will consider the discussions on diabetes and other diseases a controversial theme which thus may detract from the acceptance of this book.

The second edition of *Low-Fat Cookery* has been enlarged and revised to include adaptations for low-sodium meal planning and brief consideration of the unsaturated vegetable oils.

Entertaining sketches remain as introductory attractions for the recipe sections—usually depicting fats as elements of dietary indiscretion. Pork and peanut butter continue to hold lowly positions in menu planning, despite the fact that leaner pork cuts are appearing in the consumers' market.

The methods suggested in eliminating fats from cooking are simply described. The authors have furthered the use of wine and herbs to enhance food flavors. Perhaps dietitians will find the latter's use challenging for some hospital diets which now afford little in the way of flavor and interest.

Readers might consider the evaluations of fats in recipes (in tenths of gram) unnecessary. However, *Low-Fat Cookery* has many practical aspects. It serves as an attractive cook book introducing a new way of cooking. Recipes have been devised and compiled to meet varied tastes. Of particular interest is the list of new low-fat products with trade names, available in food stores.—*Bo Ock Lee Lum, Department of Medicine, University of Chicago Clinics.*

Gastronomique. By Ida Bailey Allen. Garden City, N.Y.: Doubleday & Company, Inc., 1958. Cloth. Pp. 384. Price $4.95.

The "fun side" of the dietetic profession is demonstrated over and over again in this new cook book. The time-consuming element of gourmet cookery has been eliminated through the use of the latest gourmet products, tested and evaluated by the author, long a familiar name as a writer of reliable cook books. In the book is a section listing the food specialty shops throughout the United States which handle such products.

Over a thousand recipes for connoisseur dishes from all parts of the world are given—including the contributions of renowned hostesses and restaurants. Interspersed among the recipes are fresh and appropriate ideas for garnishes, serving dishes, accompaniments, and serving techniques.

The chapters run the usual gamut — from hors d'oeuvres to desserts and beverages. Of great help is the first chapter which lists the basic seasonings, spices, seeds, and herbs for taste potentials; since wines and spirits are indispensable in many connoisseur dishes, basic rules for their use are given, too. High points in the book are the latest, most efficient methods for tenderizing game, new menus for cocktail parties and international-style breakfasts, elegant miniature desserts, instructions for preparing the fascinating flambé dishes, and edible cocktails, which are intriguing alcoholic concoctions to be eaten with a spoon.

This cook book can be a strong ally to anyone wishing to be *gastronomique* (meaning "epicurean, discriminating in taste of food and drink").—*Margene A. Wagstaff, Williamston, Michigan.*

RECENT BOOKS RECEIVED

The Family Medical Encyclopedia. By Justus J. Schifferes, Ph.D. Boston: Little, Brown and Company, 1959. Cloth. Pp. 617. Price $4.95.

Diabetic Menus, Meals and Recipes. Revised edition. By Betty M. West. Garden City, N.Y.: Doubleday & Company, 1959. Cloth. Pp. 254. Price $3.95.

Food for Better Performance. By R. C. Hutchinson. New York: Cambridge University Press, 1958. Cloth. Pp. 102. Price $2.75.

Some Tropical South Pacific Island Foods—Composition and Nutritive Value. By Mary Murai, Florence Pen, and Carey D. Miller. Honolulu: University of Hawaii Press, 1958. Paper. Pp. 159. Price $2.

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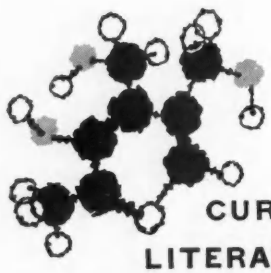

CURRENT LITERATURE

Contributed by Janette C. Carlsen, The Johns Hopkins Hospital, Baltimore; Clara Karl, University of Chicago Clinics; Carmen Esther Rivera, Sister Marie Stephen, and Luise M. Weber, Dietetic Interns, VA Center, Los Angeles; Elizabeth H. Tuft, Chicago Wesley Memorial Hospital; and the Journal staff

THE AMERICAN JOURNAL OF CLINICAL NUTRITION

Vol. 7, March-April, 1959

*Overweight in the aged. G. Hollifield and W. Parson.—p. 127.

*A study of methods used in a reducing program for excessively overweight women. R. G. MacIntosh, D. E. Daley, D. N. R. Jackson, M. A. Morrison, G. Winakor, J. F. Davey, and B. A. McLaren—p. 132.

*The effects of exercise on blood cholesterol in middle-aged men. H. J. Montove, W. D. Van Huss, W. D. Brewer, E. M. Jones, M. A. Ohlson, E. Mahoney, and H. Olson.—p. 139.

Nutritional factors in liver disease in man: A review. C. M. Leevy.—p. 146.

*Prognostic criteria of severe protein malnutrition. E. Kahn.—p. 161.

Relation of age and body weight to the frequency of local tissue changes suggestive of malnutrition: The five-year experience of a district health center nutrition clinic in New York City. R. W. Hillman—p. 166.

*Food intake and weight changes of youths on an exploring expedition. A. M. W. Porter.—p. 175.

*Growth and development of Central American children. The effect of oral administration of vitamin B_{12} to rural children of preschool and school age. N. S. Scrimshaw, J. A. Munoz, O. B. Tandon, and M. A. Guzman.—p. 180.

*Impairment of intestinal absorption of vitamin A palmitate in severe protein malnutrition (kwashiorkor). G. Arroyave, F. Viteri, M. Behar, and N. S. Scrimshaw.—p. 185.

Electrolyte disturbance in acute alcoholism: With particular reference to magnesium. H. E. Martin, C. McCuskey, Jr., and N. Tupikova.—p. 191.

*Food patterns of the Southwest. D. B. Hacker and E. D. Miller.—p. 224.

Overweight in the Aged. A study on body weight on some seven hundred people over age sixty-five revealed that 11 per cent of the men and 16 per cent of the women were 20 per cent or more above the average weight for their heights and age. Of these subjects, 11 per cent of the men and 8 per cent of the women were 20 per cent or more heavier than the average weight of the fifty-five to fifty-nine-year-old group. Average weight for people in this older group tended to plateau at the sixty-five- to seventy-four-year decade and fall thereafter. The data suggest that the incidence of obesity in older people is as great or greater than among younger adults.

Methods Used in Reducing Programs. A group of twenty-five overweight women underwent a weight reducing program in which nutrition education, anorexigenic drugs, vitamins, and placebos were used. Seventy-nine per cent of the total weight loss of all subjects occurred in the first twelve weeks. Obolip, an amphetamine product, may have been an effective adjunct in the early stage of the program but none attained her estimated ideal weight. A dietary survey carried out before the program revealed the subjects had a very limited knowledge of meal planning or sound nutritional principles. Even after an intensive educational program, many seemed unable to continue such a dietary regimen over a prolonged period. The need for good nutrition education for the prevention of overweight is indicated.

Exercise and Serum Cholesterol. The effects of supervised exercise on total serum cholesterol were studied in thirty-one sedentary middle-aged men for three months. Exercise was effective in decreasing total serum cholesterol in some subjects, but this effect appeared to be a by-product of decreasing body weight. Free serum cholesterol showed the same trends, but the relationship with body weight changes was not as close.

Severe Protein Malnutrition. This study, conducted in South Africa, was undertaken to determine the clinical signs which distinguish the patients who die of protein malnutrition from those who survive on the present treatment. Factors are discussed which can serve as prognostic criteria.

Food Intake and Weight Changes. Careful observations of weight changes on a constant food intake were made on a group of British teen-age boys while on an exploring expedition to Iceland. The subjects were in two groups: the "marchers" who worked hard but intermittently, and the "surveyors" whose work was less strenuous but more continuous. It was found that the ration scale of about 3640 calories per day was inadequate for the marchers and of doubtful adequacy for the surveyors. Maintenance of a steady body weight by adults may be taken to indicate that they are receiving an adequate caloric intake, but no such assumption can be made for teen-agers.

Growth and Vitamin B_{12}. The daily oral administration of vitamin B_{12} to preschool and school children in rural areas in Guatemala did not produce any effect on their rates of gain in either height or weight. This study illustrates some of the errors in interpretation which can result from the considerable variation and apparently fortuitous changes commonly observed in the rates of growth and maturation in children.

Impaired Vitamin A Absorption in Kwashiorkor. The effect of oral administration of vitamin A palmitate on serum vitamin A levels was tested in children suffering from kwashiorkor. It was found that the vitamin ester had no detectable effect on serum levels. After dietary treatment based exclusively on acidified, half skim milk, a test dose resulted in very marked serum vitamin A increases. It is suggested that the low levels of serum vitamin A found in kwashiorkor may be a consequence of a generalized failure to absorb fat-soluble factors.

Food Patterns of the Southwest. As the Spanish and Mexican settlers and the Indians in the Southwest mingled, each acquired some of the others' eating habits. This paper discusses the typical foods of the Southwest and their preparation, the adequacy of the diet, and how it may be modified to meet the principles of certain therapeutic diets, yet retain as many as possible of the foods desired by this group of people.

THE AMERICAN JOURNAL OF GASTROENTEROLOGY

Vol. 31, March, 1959

*Postgastrectomy steatorrhea: A variant of the blind loop syndrome. C. W. Witts, F. Goldstein, and R. I. Wise.—p. 250.

Postgastrectomy Steatorrhea. The possible effect on fat absorption of bacterial growth in the afferent gastrojejunostomy in patients with Billroth II operations was studied. Four of five patients with impaired fat absorption secondary to Billroth II gastric resection had marked improvement in fat absorption following the administration of tetracycline. After antibiotic therapy, one of two patients who showed bacterial growth in the afferent limb gained weight, with reduction in bacterial growth and elimination of steatorrhea. The author suggests that malabsorption and failure to gain weight may be brought about by a heavy growth of bacteria and their products in the blind afferent limb of such patients and that weight gain and fat absorption may follow antibiotic therapy. A diet low in sugar and high in protein in malnourished patients does not bring about improvement. His conclusion is that reduced food intake, rapid emptying of the stomach, rapid intestinal transit rates, inadequate stimulation of the flow of bile and pancreatic juice, and insufficient mixing of the food with bile and pancreatic secretions are generally the factors producing malabsorption and malnutrition in patients following postgastrectomy.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES

Vol. 237, March, 1959

*Observations on the variation of total serum cholesterol levels in normal individuals and in patients with coronary heart disease. J. S. Thompson, A. Abraham, A. W. Elias, and C. C. Scott.—p. 319.

A moderate low-fat well-balanced breakfast for a man of 25 years

When a moderate reduction of dietary fat is indicated, it is worthwhile to consider a basic cereal and milk breakfast which, as shown in the table below, *contributes well-balanced nourishment. This breakfast is moderately low in fat because its fat content of 10.9 gm. provides 20 per cent of the total calories.* It provides "Men, 25 Years" with approximately one-fourth of the recommended dietary allowances[1] of protein, important B vitamins, essential minerals; and provides quick and lasting energy. The Iowa Breakfast Studies demonstrated for young men that a basic cereal and milk breakfast maintained mental and physical efficiency during the late morning hours and that it was superior in doing so when compared either to a larger or smaller morning meal.

recommended dietary allowances and the nutritional contribution of a moderate low-fat breakfast*

Menu: Orange Juice—4 oz.;
Cereal, dry weight—1 oz.;
Whole Milk—4 oz.; Sugar—1 teaspoon;
Toast (white, enriched)—2 slices;
Butter—5 gm. (about 1 teaspoon);
Nonfat Milk—8 oz.

Nutrients	Calories	Protein	Calcium	Iron	Vitamin A	Thiamine	Riboflavin	Niacin equiv.	Ascorbic Acid
Totals supplied by Basic Breakfast**	503	20.9 gm.	0.532 gm.	2.7 mg.	588 I.U.	0.46 mg.	0.80 mg.	7.36 mg.	65.5 mg.
Recommended Dietary[1] Allowances—Men, 25 Years (70 kg.—154 lb.)	3200	70 gm.	0.8 gm.	10 mg.	5000 I.U.	1.6 mg.	1.8 mg.	21 mg.	75 mg.
Percentage Contributed by Basic Breakfast	15.7%	29.8%	66.5%	27.0%	11.8%	28.7%	44.4%	35.0%	87.3%

*Revised 1958. Food and Nutrition Board, National Research Council, Washington, D.C.

**Cereal Institute, Inc.: Breakfast Source Book. Chicago: Cereal Institute, Inc., 1959.
Watt, B. K., and Merrill, A. L.: Composition of Foods—Raw, Processed, Prepared. U.S.D.A. Agriculture Handbook No. 8, 1950.

[1]*The allowance levels are intended to cover individual variations among most normal persons as they live in the United States under usual environmental stresses. Calorie allowances apply to individuals usually engaged in moderate physical activity. For office workers or others in sedentary occupations they are excessive. Adjustments must be made for variations in body size, age, physical activity, and environmental temperature.*

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*Interactions of nutrition and infection. N. S. Scrimshaw, C. E. Taylor, and J. E. Gordon. —p. 367.

Cholesterol and Atherosclerosis. While there is a wide divergence of opinion as to the role cholesterol plays in atherosclerosis, the physician seeking to employ dietary regimens and other agents for reducing blood cholesterol is faced with the additional problem of establishing the patient's "normal" serum cholesterol level. Reduction of more than 20 per cent of the mean pretreatment values (up to 400 mg. per 100 ml. of blood) or of more than 50 mg. per 100 ml. total serum cholesterol, may be taken to indicate successful depression of serum cholesterol if the depressed level continues.

Nutrition and Infection. Definite patterns of dynamic interaction between nutrition and infection exist. Generalizations which serve as a guide for continuing investigation and which review the work of the authors are as follows: (a) In human populations, interaction between nutrition and infection is probably more important than laboratory investigations would indicate. (b) Synergism is the dominant action. (c) Synergism and malnutrition are closely related. (d) Adding nutrients to an already adequate diet usually has no effect on infections. (e) Patterns of interaction according to deficiencies in specific nutrients have typical characteristics, i.e., vitamin A deficiency is usually synergistic.

AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY

Vol. 77, March, 1959

*Growth and development. IV. Relationship between prenatal maternal nutrition and socioeconomic index, weight of mother, and birth weight of infant. E. P. Crump, E. Payton, and C. P. Horton.—p. 562.

Prenatal Maternal Nutrition. The material presented stems from a five-year study of growth and development at Hubbard Hospital, Nashville, Tennessee. Each subject was classified as to type of prenatal care, nutritional status, socio-economic status, physical measurements of the infant, and a medical-social evaluation. The results show evidence of widespread faulty dietary habits. However, there was no significant degree of correlation between prenatal nutrition of the mother and birth weight of the infant. There seems to be a trend toward better nutrition when prenatal care is begun early, when the family is in the highest socio-economic group, and when the mother has a high level of education.

AMERICAN JOURNAL OF PHYSIOLOGY

Vol. 196, March, 1959

Chan-es in blood of dogs and rabbits by high fat intake. R. L. Swank.—p.473.

*Effects of chronic treatment with carbutamide on distribution and biosynthesis of fatty acids and cholesterol in obese-hyperglycemic mice. J. Christophe and J. Mayer. —p. 603.

Fat metabolism in experimental obesities. IX. Lipogenesis and cholesterogenesis in yellow obese mice. C. Zomzely and J. Mayer.—p. 611.

Obese-Hyperglycemic Mice. Oral treatment with carbutamide (BZ-55) for seven weeks (2.5 gm. per kilogram ground chow) left the food intake and rate of weight gain of obese-hyperglycemic mice and lean littermates unmodified as compared with controls. Obese-hyperglycemic animals, after forty-nine days of treatment, showed the usual distribution and rate of biosynthesis of fatty acids and cholesterol in the liver and carcass. Liver hypertrophy, marked increase in serum cholesterol levels, and lack of improvement of the "diabetes" were also observed. Lean littermates similarly treated showed no modification in the distribution of fatty acids and cholesterol or in the biosynthesis of fatty acids in the liver and carcass. An increase in hepatic cholesterogenesis, liver hypertrophy, some increase in serum cholesterol levels, and a small but significant increase in the blood sugar levels were noticed.

AMERICAN JOURNAL OF PUBLIC HEALTH

Vol. 49, February, 1959

*The occurrence of strontium-90, iodine-131, and other radionuclides in milk—May, 1957 through April 1958. J. E. Campbell, G. K. Murthy, A. S. Goldin, H. B. Robinson, C. P. Straub, F. J. Weber, and K. H. Lewis.—p. 225.

Radiation and Milk. Data are presented giving concentrations of iodine-131, strontium-89, strontium-90, barium-140, and cesium-137 in monthly milk samples from selected milk sheds serving Sacramento, Salt Lake City, St. Louis, Cincinnati, and New York City during the period from May, 1957 through April, 1958. The concentration of iodine-131, barium-140, and strontium-89 varied widely, the higher levels being closely associated with the number of nuclear weapons tests per month in the U. S., while tests conducted elsewhere in the world had a noticeable but lesser effect. On the other hand, cesium-137 and strontium-90 were not correlated with the number of concurrent weapons tests. Samples from each area contained fairly consistent amounts of these two fission products. The samples from the St. Louis milk shed contained higher concentrations of strontium-90, strontium-89, and barium-140 than those from other areas. These differences emphasize the need for more intensive studies concerning the factors influencing levels of radionuclides in milk. From the standpoint of health significance, strontium-90 is generally considered to be the most hazardous fission product because of its long radioactive half-life, its relatively long retention in the body, and its similarity to calcium resulting in localization in skeletal tissue, and hence, into close association with the blood-forming organs.

AMERICAN JOURNAL OF SURGERY

Vol. 97, No. 3, March, 1959

*Physiologic observations upon a partial pancreatic fistula following gastrectomy. M. C. Anderson, W. H. Mehn, and H. L. Method. —p. 260.

Pancreatic Fistula. The article presents the pancreatic responses to a variety of gastrointestinal stimuli following a subtotal gastrectomy and the effect of gastrectomy on total volume output, concentration, functions, and so on, of the pancreas. Eleven patients were studied and their response to various chemicals, enzymes, and test meals were compared with normal values obtained from the literature. Results indicate that gastrectomy does not significantly alter pancreatic or digestive function.

ANNALS OF INTERNAL MEDICINE

Vol. 50, March, 1959

*Clinical evaluation of formamidinyliminourea, a new biguanide oral blood sugar lowering compound: Comparison with other hypoglycemic agents. L. P. Krall and R. F. Bradley.—p. 586.

*Rheumatism and arthritis: Review of American and English literature of recent years (twelfth rheumatism review). Part II. C. J. Smyth, J. J. Bunim, W. S. Clark, D. C. Crain, F. E. Demartini, I. F. Duff, E. P. Engleman, D. C. Graham, M. M. Montgomery, B. M. Norcross, H. F. Polley, M. W. Ropes, and E. F. Rosenberg.—p. 633.

Clinical Evaluation of Formamidinyliminourea. A review of hypoglycemic agents is presented. Included in the discussion are guanidine, Synthalin A and B, and a new series known as biguanides or formamidinyliminoureas. The effects of biguanides used for periods up to seventeen months were evaluated in 173 patients. All types of diabetes were represented, including fifty-three juvenile-onset cases. Duration of diabetes varied from newly diagnosed cases to thirty-five years. Of the group, 150 patients (88 per cent) showed lowered blood sugar. However, 66 (38 per cent) were unable to continue biguanide therapy because of gastrointestinal side effects. These side effects were quickly reversible, and no clinical toxicity was noted. Hepatic, renal, and hematologic studies have revealed no abnormalities to date.

Rheumatism and Arthritis. The scope of this review of the "collagen diseases" is indicated by the completeness of the bibliography, which lists references to 2299 papers and 24 books published within the last three years.

ARCHIVES OF INTERNAL MEDICINE

Vol. 103, February, 1959

*Pernicious anemia—1822–1929. A. Jacobs.—p. 329.

Vol. 103, March, 1959

An outline of the use of iodine in endemic goiter. H. N. Wagner, Jr.—p. 484.

The urine remains the same. M. B. Strauss.—p. 489.

Meat...

and Fat in the American Diet

In this era of public concern over the possibly deleterious influence of dietary fat on human health, a sober look at the facts as they exist today appears indicated.

After reviewing the evidence up to 1958, The Food and Nutrition Board of the National Research Council* defined the contribution of fat to American nutrition.

> "The human requirement for fat or for specific fatty acids, as well as the nutritional implications of a high content of fat in the diet, remains to be determined.
>
> "In the United States an average diet containing approximately 40 per cent of the calories in the form of fat has been consistent with the attainment of one of the best health patterns in the world."

This statement by unbiased authority demonstrates that drastic curtailment of fat intake is not indicated on the basis of current evidence.

However, if special circumstances call for curtailment of fat intake, meat need not be denied the patient. Visible fat can be removed easily. In addition to its high protein contribution to tissue repair and maintenance, meat provides the gamut of B vitamins and important minerals essential to sound nutrition.

*The Role of Dietary Fat in Human Health: A Report of the Food and Nutrition Board, National Academy of Sciences—National Research Council, Washington, D. C., Publication 575, 1958.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

American Meat Institute
Main Office, Chicago... Members Throughout the United States

Present concepts of the renal circulation. F. R. Winton.—p. 495.

Pernicious Anemia. The author reviews the significant contributions to the study of pernicious anemia, beginning with the first description of the disease by Combe of Edinburgh, in 1822. The review ends with the report of the classic investigations of Castle and his colleagues which laid the foundation of our present understanding of the disease.

THE BRITISH JOURNAL OF NUTRITION

Vol. 13, No. 1, 1959

*Water and electrolyte exchanges of obese patients on a reducing regimen. R. Passmore, J. A. Strong, and F. J. Ritchie.—p. 17.

*Determination of the total daily energy expenditure in man by indirect calorimetry: Assessment of the accuracy of a modern technique. J. V. G. A. Durnin and J. M. Brockway.—p. 41.

*Error in the provision of diets of known electrolyte content. C. T. G. Flear, P. Hughes, and A. McLellan.—p. 54.

*The use of surface area and of body-weight as standards of reference in studies on human energy expenditure. J. V. G. A. Durnin.—p. 68.

Growth response to dietary penicillin of germ-free chicks and of chicks with a defined intestinal flora. M. Lev and M. Forbes.—p. 78.

*The dietary intake and activities of an Alaskan mountaineering expedition. J. D. Kinloch.—p. 85.

Cod-liver oil as both source and antagonist of vitamin. E. T. Moore, I. M. Sharman, and R. J. Ward.—p. 100.

Water and Electrolyte Exchanges in Obesity. Water and electrolyte exchanges were recorded in five patients on a reducing regimen lasting over forty days. Losses and gains of total body water were not associated with changes in fluid intake. They could only be partly explained by variations in the urinary output. Evaporative water losses were very variable. The electrolyte exchanges indicated that during initial periods of dehydration there were losses of both intracellular and extracellular water. In subsequent periods, water retention was associated with increases of extracellular water, despite probable continuing losses of intracellular water.

Energy Measurements in Man. An account of the practical use of the respirometer and of the difficulties of assessing energy expenditures by indirect calorimetry is presented. The various sources of error in measurements of total energy expenditure in the field are discussed in relation to a small experiment in which the food intake and energy expenditure of four young men were measured for one week.

Composition of Prescribed Diets. This paper considers errors attendant on the provision of diets of specified composition with the facilities available in a busy general hospital with a diet kitchen. Twenty-one examples of two diets provided for balance study were analyzed for sodium, potassium, and chloride. Both the daily variation and the discrepancy between the calculated composition and that found by analysis were greater than analytical or sampling errors, presumably owing to intrinsic variation in items of the diet. All low-sodium diets contained more sodium than prescribed.

Surface Area and Body Weight in Energy Study. In assessing the nutritional status of populations, it is becoming increasingly common to measure not only the total food intake but also the energy expenditure of individuals. It would be helpful if the results of energy expenditure were expressed in a uniform manner. Results for about 160 subjects showed that surface area is no more useful as a standard of reference than gross body weight. It is suggested that results of energy expenditure be expressed as gross calories per minute if body weight is stated.

Food Intake in Mountaineering. The mean caloric intake of a four-man Alaskan mountaineering expedition over a period of six weeks was found to be 3825 calories daily. Daily activities of the expedition are described, and it is concluded that, as body weights remained fairly constant, the four men were in approximate caloric balance. Principles of provisioning a small field expedition are outlined, and a suitable ration is described.

CANADIAN JOURNAL OF PUBLIC HEALTH

Vol. 50, February, 1959

*Food intakes of teachers and of industrial employees. C. F. Farquharson, J. Deeks, M. J. Veen, R. Barnes, and E. W. McHenry.—p. 80.

Food Intakes of Teachers and of Industrial Employees. In Toronto, data concerning food intake were supplied by 70 men teachers, 198 women teachers, 500 men in industry, and 76 women in industry. For the industrial employees, records for 50 men and 50 women were selected at random. Since Canada's Food Rules are the basis of most efforts in nutrition education in the Toronto area, food intakes were evaluated in these terms. Most of the adults ate quantities of meat, bread, and eggs which equalled or exceeded the recommendations. Only the teachers showed general use of fruits and vegetables in recommended quantities. Whether this was due to education is open to question. Recommendations about milk and breakfast cereal have not made an impression on most of the adults studied. Percentages of adults with weights more than 100 per cent and less than 90 per cent of the Canadian averages for height and age were calculated. Men teachers had weights fairly evenly distributed about the averages with about similar numbers of over- and underweight individuals. More women were under- than overweight; many may be purposely eating to remain slim. It is obvious that health education in the use of milk, cereals, fruits, and vegetables has had little effect.

DIABETES

Vol. 8, March-April, 1959

*Impaired glucose tolerance and glucosuria induced in man by repeated injections of glucagon. T. B. Van Itallie, J.-P. Felber, J. Hoet, and A. E. Renold.—p. 94.

*Carbohydrate metabolism and insulin sensitivity in the adrenalectomized dog. Studies with C^{14} glucose. N. Altszuler, R. Steele, A. Dunn, J. S. Wall, and R. C. deBodo.—p. 105.

*Utilization of glucose in normal and diabetic rabbits. Effects of insulin, glucagon, and glucose. S. A. Berson, S. Weisenfeld, and M. Pascullo.—p. 116.

Impaired Glucose Tolerance and Glucosuria. Repeated injections of glucagon can induce a transient diabetic-like state in man in which the glucosuria results from impaired tolerance to ingested carbohydrate. This diabetic-like state most closely resembles so-called hunger or starvation diabetes in that the fasting blood sugar remains normal or low, and liver glycogen is depleted.

Carbohydrate Metabolism and Adrenalectomy. It is well established that adrenalectomy results in disturbances in carbohydrate metabolism. One indication is the greater than normal sensitivity of the adrenalectomized animal to the hypoglycemic effect of insulin. However, the adrenalectomized animal is less sensitive than the hypophysectomized one. In this study several aspects of carbohydrate metabolism, including the size of the glucose pool, glucose production, and glucose utilization, were studied. Disturbances in carbohydrate metabolism of the adrenalectomized animal appear to be less severe than those of the hypophysectomized animal. These differences are attributed to the presence of growth hormone in the adrenalectomized animals.

Glucose Utilization. The relative importance of reduction in glucose supply and increase in glucose utilization in the hypoglycemia induced by insulin was studied in rabbits. Experiments revealed that glucose utilization is increased several fold following the administration of glucose or glucagon to normal rabbits, but not in alloxan-diabetic rabbits. It is implied that endogenous insulin secretion in response to hyperglycemia augments glucose utilization. The administration of fructose, D-galactose, or L-arabinose failed to stimulate insulin secretion in this experiment.

ENDOCRINOLOGY

Vol. 64, March, 1959

*Effects of restricted food intake and growth hormone on rat liver proteins and nucleic acids. H. S. DiStefano and H. F. Diermeier.—p. 448.

Effect of Food Intake and Growth Hormone on Liver. The part played by food intake on differences observed in rat liver cells of hypophysectomized animals was studied. Rats were fed a synthetic diet adequate to support normal growth. The intake of hypophysectomized animals was from 35 to 40 per cent of that eaten by the *ad libitum*-fed controls. In the liver, de-

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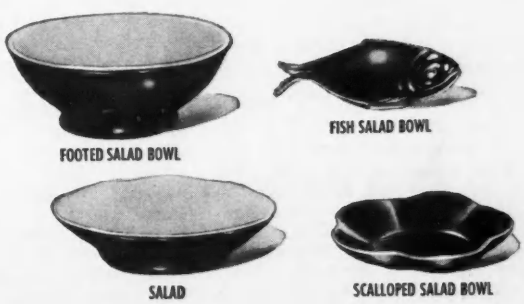

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crease in ribose nucleic acid (RNA) and in protein was due to the lack of anterior pituitary hormone and in part to lowered food consumption. Neither growth hormone nor restricted food intake influenced the desoxyribose nucleic acid (DNA) content of rat liver cells within a given class of ploidy cells. However, restricted food intake played a part in the degree of "ploidy shift" in intact and in growth-hormone-treated hypophysectomized animals. The presence of growth hormone and unrestricted food intake were necessary to obtain the full shift. The study pointed out the effect of restricted diet and stimulatory effect of growth hormone on nuclear cytoplasmic RNA and protein.

FOOD AND NUTRITION NOTES AND REVIEWS

Vol. 15, November and December, 1958

Dietary factors in malignant disease. C. N. Turner.—p. 99.

*Nutrition and the Papuan child. H. Oomen and S. Malcolm.—p. 104.

Nutrition and the Papuan Child. This paper presents the results of a survey conducted on the nutrition, health, and development of the Papuan (New Guinea) child. Special attention is given to breast feeding, the introduction of first foods, and the social and dietary habits of the mother. Prospects of improvement are discussed. It is pointed out that efforts to improve nutritional conditions should start at the level of the present subsistence economy.

FOOD RESEARCH

Vol. 24, March-April, 1959

*The effect of household table salt on the whipping quality of egg white solids. C. Sechler, L. G. Maharg, and M. Mangel.—p. 198.

*Variability in tenderness of chicken. P. C. Paul, C. I. Sorenson, and H. Abplanalp.—p. 205.

The relationship between panel scores and certain chemical components in precooked irradiated meats. A. M. Pearson, R. N. Costilow, O. F. Batzer, R. A. Sliwinski, and L. Chang.—p. 228.

Salt and Whipping Egg Whites. Selected levels of table salt were used to test their effect on the whipping quality and stability of foam from dried egg albumen. There appears to be little beneficial effect of salt on the foam of dried albumen within the flavor acceptability range. Salt, above the acceptable flavor range, tended to stabilize the foam, but the volume was decreased and the whipping time was lengthened.

Tenderness of Chicken. Use of maternal half-sib chickens did not decrease the variation in cooking losses and tenderness except for dripping losses. The use of duplicate determinations on the same chicken was a much more effective method of reducing experimental error in the tenderness measurements than was the use of maternal half-sibs. The correlations between the various tenderness measurements, i.e., score, number of chews, shear and percent nitrogen extractable by buffer, were quite high with the exception of the per cent extractable nitrogen.

FOOD TECHNOLOGY

Vol. 13, March, 1959

*Influence of Acronizing on organisms causing spoilage in commercially processed fryers. K. L. Simpson, C. W. Nagel, H. Ng, R. H. Vaughn, and G. F. Stewart.—p. 153.

*Effect of packaging on palatability and weight loss of frozen ground pork and beef. J. D. Winter and S. R. Trantanella.—p. 165.

*Some factors affecting intensity of flavor and toughness of chicken muscle. D. W. Peterson, M. Simone, A. L. Lilyblade, and R. Martin.—p. 204.

*Carob varieties and composition. R. J. Binder, J. E. Coit, K. T. Williams, and J. E. Brekke.—p. 213.

Acronizing Commercially-Processed Fryers. Thirty-six fryers commercially processed in California, Georgia, and Alabama, with and without Acronize treatment, were obtained from several retail stores in the Sacramento, California area. After storage for seven days at 40°F., the birds were examined microbiologically. All had very high bacteria counts; yeast counts were generally quite low and in no case did they approach the bacterial counts. It is concluded that spoilage in commercially processed fryers may generally be attributed to bacterial rather than yeast growth, whether or not the birds are Acronized.

Effect of Packaging on Frozen Ground Meat. Ground pork and beef were packaged, frozen, and stored at 8° to 12°F. for periods up to eleven months. Seven types of plastic film were used for packaging. Some lots were packaged in an initial atmosphere of nitrogen. All lots were judged for palatability. Palatability of pork after four months' storage indicated that all samples remained good during this period regardless of packaging material or treatment. Beef was not judged at this period. No advantage was indicated by packaging in an initial atmosphere of nitrogen with the plastic films used. There were no significant differences in palatability attributable to treatment of the packaging materials with antioxidants at the concentrations used. After seven months, higher palatability scores were found for pork in the heavier gauges of polyethylene than in the lighter and for pork stored in films made of polyethylene in combination with other materials vs. films made of polyethylene alone. No appreciable change in weight occurred in any of the lots during storage. Since the storage temperature was considerably above those normally used, no conclusions regarding storage life of the product at recommended temperatures should be inferred.

Factors Affecting Flavor in Chicken Muscle. Flavor of dark chicken muscle (leg and thigh) and light muscle (breast) from birds under several physiologic conditions was evaluated. Dark muscle of nineteen-month-old hens had a more intense flavor than dark muscle of three-month-old pullets. Dark muscle of the older birds had a more intense flavor than breast muscle of the same birds. No differences were found between light muscle of younger and older birds or between dark and light muscle of younger birds. Stilbesterol or exercise decreased the flavor intensity of breast muscle but had no effect on dark muscle. Testosterone was without effect on flavor of either type of muscle.

Carob Varieties and Composition. Thirty varieties of carob were analyzed in an effort to acquaint the food industry with the nutritive factors and to provide a preliminary survey of varieties that might be suitable for commercial cultivation in the U.S. The varieties analyzed contained extremely high amounts of sugar, mostly sucrose and invert sugars, compared with other fresh fruit in harvest-ripe condition. Protein and carbohydrate of the pod flesh make carob compare favorably with barley in nutritive value. Carob imported in the U.S. is currently manufactured into a flour for use as a food and in pharmaceuticals. When incorporated into confections, such as cake, cookies, candy, and ice cream, the flour imparts a flavor closely resembling that of cocoa or chocolate.

GASTROENTEROLOGY

Vol. 36, February, 1959

*Deposition and storage of vitamin B_{12} in the normal and diseased liver. G. B. J. Glass.—p. 180.

Vol. 36, March, 1959

*The dumping syndrome—"homeostatic overreaction"? Editorials.—p. 423.

Vitamin B_{12} and Liver Function. Hepatic surface radioactivity following administration of labeled vitamin B_{12} is a true measure of the radioactive B_{12} in liver tissue. This technique can be applied successfully to the measurement of the intestinal absorption of vitamin B_{12} and to the diagnosis of pernicious anemia and sprue in relapse and remission. The ability of the liver tissue to take up vitamin B_{12} from the circulation is impaired in one-third of the patients with liver disease. The liver is the main storage organ for vitamin B_{12}. The discharge of vitamin B_{12} from the liver in human beings is very slow—with a biologic half-lifetime of ten months on the average. This explains the long remissions in pernicious anemia, after adequate treatment, and the long latent periods preceding the development of B_{12} deficiency and macrocytic anemia in dietary B_{12} deprivation and following total gastrectomy.

The Dumping Syndrome. Evaluation of therapy within the first postoperative year after gastric resection reveals many apparently useful agents, including parasympathomimetic and adrenolytic compounds, potassium chloride, and ganglion-blocking, adrenergic, antihistaminic, and sedative drugs. These may be used alone or in combination with frequent, small feedings, low-carbohydrate diets, and diets low in dairy products, avoidance of liquids during the eating of solids, eating meals supine, and hypnosis or

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even psychoanalysis. However, none of these measures is uniformly or consistently effective in patients with persistent symptoms. The principal etiologic factor in the dumping syndrome is the altered gastric anatomy and the consequent rapid passage of food. The result is a complex, physiologic, hormonal, and biochemical chain of events which might be termed "homeostatic overreaction."

GERIATRICS

Vol. 14, March, 1959

*Management of osteoporosis in the elderly patient. Part II. I. Stein and M. T. Beller.—p. 175.

*A nutrition program for older people. M. M. Reynolds.—p. 190.

Osteoporosis in Elderly Patients. Before treatment of osteoporosis, preliminary studies were carried out. Patients were placed on a neutral ash, low-calcium diet as advocated by Allbright and Refeinstein. It contained 0.137 gm. calcium per day. The dietary pattern excluded butter, milk, cheese, and cream. On this diet, 100 mg. calcium were excreted daily. Patients were placed on a mixture of androgens and estrogens to stimulate osteoid formation. After that, they were placed on a diet high in protein, calcium, phosphorus, ascorbic acid, and vitamin D. Within a month, these patients showed material improvement and relief from symptoms. Patients were kept on the diet indefinitely and were given analgesics, sedatives, and physical therapy.

Nutrition for Older People. A healthful diet for elderly people with a proper distribution of essential nutrients in adequate amounts as recommended by the Food and Nutrition Board differs little from that of any adult group. The diet for the elderly patient is lower in calories than that for the child. Persons with a tendency toward hypertension may need to reduce intake of sodium and iodine in the form of salt. Food must be well prepared to be accepted by older persons. Nutritional programs must be within the representative ranges of likes and dislikes and customary meal patterns; they must take into account simple but satisfactory methods of food preparation and cost. The author suggests that in institutions for the aged, residents' participation in food preparation, table setting, and other duties of the dietary department should be encouraged. Seasonal foods, afternoon teas, and snacks should be provided. The use of nutritional consultants is encouraged. The author recommends expansion of research related to food and nutrition for old people who are in good health as well as for those who need medical care.

HOSPITAL ADMINISTRATION

Vol. 4, Winter, 1959

*Reflections on the art of administration. O. Tead.—p. 6.

*The patient and the organization man. R. W. Gable.—p. 41.

Art of Administration. An administrator is described as the chief facilitator, expeditor, and integrator of diversified but necessary functions and labors on the part of a variety of associated individuals and groups. Although this paper is directed to hospital administrators, some of the factors discussed, such as purposiveness, leadership, communication, coordination, collective dealing, creativity, and community concerns, are applicable to a dietary administrator as well. The author makes a plea for the operation of our health institutions in democratic managerial ways.

The Patient and the Organization Man. Administration, according to this author, is a process of influencing human behavior so that organization goals can be achieved. He stresses the importance of patient-centered hospital administration molding the organization to suit the individual rather than manipulating the individual to suit the organization.

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

Vol. 7, March, 1959

*Flavor evaluation of potatoes grown in soils treated with pentachloronitrobenzene. P. C. Fry.—p. 201.

Flavor of Potatoes. Flavor evaluation tests on potatoes treated with a pesticide, pentachloronitrobenzene, showed statistically significant flavor changes for only six of nineteen amounts tested. Potatoes grown in fine sandy loam had a slight tendency toward greater flavor changes than those grown in silt loam and land having a high content of organic matter. Analyses of variance showed that the flavor of the potatoes was not altered to the extent that consumer acceptance could be adversely affected.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 169, March 7, 1959

*Anemia and kwashiorkor. Foreign Letters–India.—p. 1103.

*Carbohydrate metabolism in chronic alcoholism. Foreign Letters–Sweden.—p. 1107.

*Vitamin B_{12} absorption. Foreign Letters–United Kingdom.—p. 1108.

Vol. 169, March 14, 1959

*Tube feeding. W. A. Krehl.—p. 1153.

*Bronchial asthma due to food allergy alone in ninety-five patients. A. H. Rowe, A. Rowe, Jr., and E. J. Young.—p. 1158.

Weight gain after cessation of smoking. Questions and Answers.—p. 1269.

Vol. 169, April 4, 1959

*Vitamin B_{12} and nitrogen metabolism. Foreign Letters–India.—p. 1650.

*Emotional state and energy expenditure. Foreign Letters–United Kingdom.—p. 1652.

*Boiled peanuts for diarrhea. Questions and Answers.—p. 1693.

Anemia and Kwashiorkor. Fifty patients with iron-deficiency anemia were treated with intramuscular injections of an iron-dextran complex. These patients were divided into those in whom the iron deficiency was not associated with kwashiorkor and those who had both conditions. In the group without kwashiorkor, the bone marrow was typical of microcytic anemia with normoblastic reaction. The findings in the kwashiorkor group were those of a macronormoblastic reaction without any megaloblasts indicating that the anemia may be of a mixed type. The intramuscular injections of iron were felt to be advantageous over oral iron therapy.

Carbohydrate Metabolism in Alcoholism. A series of seventy-five male alcoholics were investigated with a view to determining the incidence of disturbances of carbohydrate metabolism. Hypoglycemia was associated with the milder cases of liver degeneration and diabetogenous metabolic disorders in the patients with more pronounced hepatic lesions.

Vitamin B_{12} Absorption. By direct measurement of the distribution of radioactivity in the small intestine of patients given labeled vitamin B_{12}, the site of the absorption was found to be the ileum. Absorption was maximum in the distal half or two-thirds of the ileum. The authors suggest that the physiologic absorption of vitamin B_{12} might, in man, be a definite function of the distal part of the small intestine which may contain a specific receptor mechanism for it. A congenital defect of this receptor would explain the development of the pernicious anemia syndrome. It is suggested that vitamin B_{12} should be given after all operations involving resection of the ileum.

Tube Feeding. Nine patients in whom tube feeding had been used and in whom diarrhea became troublesome with the usual skim milk-based formula were given a soybean milk preparation. This preparation was effective in returning the bowel movement pattern to normal limits in seven of the nine patients, and it gave no indications of biochemical upsets. This tube feeding is simply prepared by dilution of a can of the ready-prepared soybean milk with an equal amount of water and fortification with vitamins. When used for a prolonged time, an iron supplement should be used.

Asthma and Food Allergy. Food allergy is often ignored or inadequately controlled when it is the sole cause of bronchial asthma or contributes to the effects of inhaled allergens. The assumption that bronchial asthma is due to inhaled allergens sometimes results in overlooking allergens in foods. Recognition of the importance of food allergy in a patient is usually impossible unless one begins with a cereal-free elimination diet which assumes allergy to cereal grains as well as to milk, eggs, and other less common allergenic foods. This was shown in a study of fifty children and forty-five adults, whose bronchial asthma was relieved without use of antigens, vaccines, corticosteroids, or ACTH. Strict adherence to the diet was necessary at first, especially in the winter, but in many cases, tolerance to some foods developed in several years. A more liberal diet could be allowed in the

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summer. The reference for the elimination diet is given.

Weight Gain after Smoking Is Stopped. Weight gain after cessation of smoking, just as true weight gain under any circumstances, must be due to an excess of caloric intake over caloric expenditure. It is felt that little alteration in metabolic processes occurs after cessation of smoking. In most chronic smokers, hunger and appetite are depressed. Psychic restlessness, previously satisfied by smoking, is now appeased by the substitution of food.

Vitamin B_{12} and Nitrogen Metabolism. The effect of vitamin B_{12} on the digestibility coefficient and nitrogen retention in rats was studied. A higher growth response was noticed in the rats receiving vitamin B_{12}, suggesting a specific function for this vitamin in anabolism. There was no significant difference in digestibility coefficient in the two groups, but there was a much higher retention of nitrogen in the rats receiving vitamin B_{12}.

Emotions and Energy Expenditure. It has been supposed that euthyroid nervous subjects show a tendency toward a high basal metabolic rate. Results of a study revealed that the mean oxygen consumption of the mentally disturbed patients was not significantly different from that of normal subjects in the lying and sitting positions and was actually less in the standing position.

Boiled Peanuts for Diarrhea. The control of diarrhea by boiled peanuts in a patient who has had a resection of the distal ileum is an interesting observation. This consultant knows of no explanation for this, but peanuts and other nuts contain a number of constituents that have physiologic or pharmacologic action. Further study of this effect appears to be warranted.

THE JOURNAL OF AVIATION MEDICINE

Vol. 30, March, 1959

*Physiologic response to subgravity. I. Mechanics of nourishment and deglutition of solids and liquids. J. E. Ward, W. R. Hawkins, and H. Stallings.—p. 151.

Feeding in Space. To study the mechanics of nourishment during weightlessness, 165 subgravity parabolas were flown in an F-94C aircraft. Twenty-five experimental subjects attempted to drink from an open container, a container fitted with a pierced lid and plastic straw, and a plastic squeeze bottle. Observations were made regarding deglutition of solids, including swallowing of both well and poorly masticated boli. Drinking from open containers proved to be more difficult than anticipated. For safety reasons, closed containers, such as squeeze bottles, must be used to transfer liquids to the mouth under conditions of zero-gravity; the use of straws is not practical. Deglutition of liquids or well masticated solids can be accomplished with little or no difficulty in the weightless state. However, a large solid bolus of food is a potential aspiration problem. Regurgitation of stomach contents may become a serious annoyance during orbital flight. Only a small quantity of liquids should be taken at one time. Movements or abdominal pressures, which may initiate vomiting, must be avoided.

THE JOURNAL OF THE CANADIAN DIETETIC ASSOCIATION

Vol. 21, March, 1959

*Dietetics—today and tomorrow. M. Myers.—p. 48.

*Evaluation of protein in foods—criteria for describing protein value.—J. A. Campbell and D. G. Chapman.—p. 51.

Dietetics, Today and Tomorrow. Dietetics, to the author, means a profession with the words—service, nutrition, health, science, education—all interlaced in varying degrees of importance. In this address, she expresses her views on some major factors facing dietitians today, including the need for delegation of administrative responsibility and suggestions to increase the number and quality of dietitians.

Evaluation of Protein in Foods. As a criteria for describing protein value, a "protein rating" based on both quality and quantity of protein in the food was developed. It is obtained by multiplying the protein efficiency ratio, determined by a recommended method, by the grams of protein in a reasonable daily intake. A food having a rating of 40 or more may be referred to as an excellent dietary source of protein, and one with a rating of 20 to 39 as a good source. The procedure was applied to a number of foods and appeared to classify them in a logical manner.

THE JOURNAL OF CLINICAL INVESTIGATION

Vol. 38, February, 1959

*Body iron exchange in man. C. A. Finch.—p. 392.

*The fatty acids of human milk. II. Alterations produced by manipulation of caloric balance and exchange of dietary fats. W. Insull, Jr., J. Hirsch, A. T. James, and E. H. Ahrens, Jr.—p. 443.

Body Iron Exchange in Man. Red cell iron turnover as measured by the radioactivity of the circulating red cell iron over a four-year period was found to represent 0.47 and 0.53 mg. per day in a group of six men and twelve non-menstruating women. The amount of miscible tissue iron was identified by an exaggerated fall in the first year. This miscible pool is appreciably smaller than estimates of non-hemoglobin body iron. Iron turnover of total miscible body iron is calculated to be 0.61 mg. per day in men, 0.64 mg. per day in non-menstruating women, and 1.22 mg. per day in menstruating women.

Human Milk Fatty Acids. The fatty acid composition of human breast milk can be radically altered without affecting milk volume or milk fat output. During energy equilibrium, milk fat closely resembles dietary fat, but, when caloric intake is deficient, milk fat approaches the composition of human depot fat. These findings suggest that, under either of these nutritional conditions, transfer of dietary or depot fat dictates the fatty acid pattern of human breast milk. However, when excess nonfat calories are fed to the mother, the milk shows a striking increase in lauric and myristic acids and a marked decline of all polyenoic acids. Yet, none of the serum ester groups (cholesterol esters, triglycerides, and phospholipids) show a parallel rise in these acids. Thus, synthesis of fatty acids in the breast appears to be promoted when excess calories are fed. Results also suggest that fatty acid synthesis in the human mammary gland differs in important respects from that in extramammary depots.

JOURNAL OF HOME ECONOMICS

Vol. 51, March, 1959

*Human energy expenditures as criteria for the design of household-storage facilities. E. C. McCracken and M. Richardson.—p. 198.

*Nutrition in rehabilitation

Education of the patient. A. Reams.—p. 207.

Nutrition in rehabilitation of the handicapped. N. M. Sailor.—p. 208.

The dietitian and nutritionist as members of a home care rehabilitation team. J. Legant and M. J. Baiano.—p. 209.

Energy Needs Influence Home-Design for Storage. Using homemakers of average height as subjects, measurements were made of the comparative energy expenditures for storing utensils on open shelves and in base cabinets. This article shows the value of relating design of household storage facilities to the energy expenditure required of the person using the facility. The data on dimensions will be valuable to architects and builders as well as to families.

Education of the Patient. This article is one in a series of articles dealing with the rehabilitation of the physically handicapped. Hospital dietitians can contribute immeasurably toward the full rehabilitation of the patient, not only with respect to his nutritional status, but often toward an improved physical and emotional state. In addition to dietary instruction, the patient requires motivation, a thorough understanding of the aims and purposes, and some prediction as to the outlook for the future regarding his food habits.

Nutrition in Rehabilitation. This article is written by a nutrition consultant of the Visiting Nurse Service of New York. Her role in the rehabilitation program is to work with the staff nurses, helping them in interpreting diet orders and adapting them to the patient's cultural patterns and economic status, making an evaluation of the patient's dietary habits, or suggesting simplified menu plans for the physically handicapped homemaker.

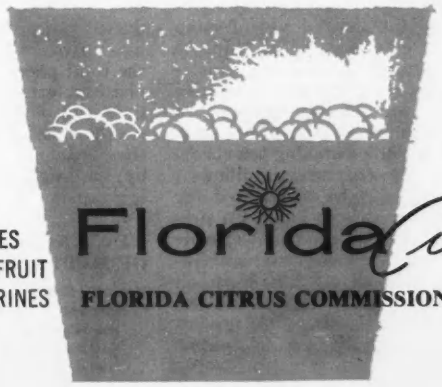
there's no juice like citrus *juice*

As a high-potency source of vitamin C, citrus juice—fresh, frozen, or canned—is unmatched for convenience and economy. The table below shows amounts† of other fruit juices required to supply the 100 mg.* of vitamin C in one glass (7-9 fl. oz.) of citrus juice.

citrus	1 glass
apple	50 glasses
grape	9 glasses
pineapple	3-4 glasses
prune	50 glasses

†Data calculated from: Watt, B. K. et al., U.S. Dept. Agric. Handbook No. 8, 1950; and Burger, M. et al. Agr. & Food Chem. 4:418, 1956.

*This is the peak of the Recommended Daily Allowances for adolescence or pregnancy; 150 mg. during lactation; 70-75 mg. for normal adults.



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Home-Care Rehabilitation Team. An organized home-care program offers an excellent opportunity for the hospital dietitian and the community nutritionist to work together as members of the rehabilitation team. This article describes such a set-up in Westchester County, New York.

JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

Vol. 32, January 16, 1959

*Lipids in health and disease. G. Chatterjee.—p. 51.

Lipids in Health and Disease. Studies on the changes in the concentrations of lipids during various pathologic conditions are briefly reviewed. In general, pathologic conditions can be classified into two groups: where there is an accumulation of the lipids and where there is depletion. Conditions presented include arteriosclerosis, central nervous system disorders, diabetes, carcinoma, tuberculosis, hormonal defects, liver and kidney diseases, anemia, and others.

JOURNAL OF LABORATORY AND CLINICAL INVESTIGATION

Vol. 53, March 1959

*The influence of alcohol and dietary magnesium upon hypercholesterolemia and atherogenesis in the rat. L. S. Gottlieb, S. D. Broitman, J. J. Vitale, and N. Zamchek.—p. 433.

Effect of Alcohol and Magnesium on Hypercholesterolemia. Weanling albino rats were fed a basic diet of purified casein. The diet was made atherogenic by addition of 1.0 per cent cholesterol and 0.3 per cent cholic acid. One group received 20 per cent alcohol while another received water as the only source of fluid. Intakes were measured daily. There was no correlation between the level of dietary magnesium and serum cholesterol in animals fed alcohol or water. Serum cholesterol levels of animals drinking 20 per cent alcohol were higher than those of animals fed only water. The addition of alcohol resulted in decreased food intake as well as decreased total caloric intake. Alcohol increased the magnesium requirement of animals fed the basic diet, the addition of cholesterol and cholic acid accentuating the difference. Possible mechanisms for these observations are discussed. The cause of elevated serum cholesterol levels associated with alcohol intake is not clear.

THE JOURNAL OF NUTRITION

Vol. 67, January, 1959

*The urinary excretion of five essential amino acids by young women. R. M. Leverton, F. S. Waddill, and M. Skellenger.—p. 19.

*Some metabolic effects of a high-fat, high-protein diet during semistarvation under winter field conditions. H. F. Drury, D. A. Vaughan, and J. P. Hannon.—p. 85.

*Some biochemical effects of restricted diets during successive field trials in winter. D. A. Vaughan, H. F. Drury, J. P. Hannon, L. N. Vaughan, and A. M. Larson.—p. 99.

Amino Acid Excretion. Data are presented for the urinary excretion of threonine, valine, tryptophan, leucine, phenylalanine, and tyrosine, fed at several levels in crystalline form to young women. There was considerable variation in the excretion of all of the amino acids studied among individuals at the same and at different levels of intake. The highest mean excretion occurred on the highest intake for threonine, tryptophan, and phenylalanine, and the lowest excretion occurred on the lowest intakes for tryptophan, phenylalanine, and leucine. Deficiencies between mean excretion values on different intakes were seldom significant.

High-Fat Diet in Semistarvation. Experiments reported in this paper revealed that a 1000-calorie diet consisting almost entirely of pemmican, a dehydrated, high-fat, high-protein meat product, was deemed adequate for most survival situations faced by air crews in the Arctic. Sequential changes in the negative nitrogen balances and ketone body excretions were interpreted to mean that the subjects were becoming adapted to a carbohydrate-free diet and caloric restriction.

Pemmican for Survival. This work confirms the adequacy of pemmican as an emergency ration for short-term survival. Evidence is presented that caloric restriction *per se* and the composition of the diet during caloric restriction have effects which last well beyond the end of the period of dietary stress. Even after an interval of a week of *ad libitum* dietary intake, these effects may modify responses to a second stress period, manifesting themselves in higher fasting blood sugars, lower nitrogen excretion, and ketone body production.

JOURNAL OF PEDIATRICS

Vol. 54, March, 1959

*Obesity in children. H. Bakwin.—p. 392.

Obesity in Children. Before recommending treatment, the physician must decide whether the obesity is pathologic. If a youngster is only moderately overweight and neither he nor his parents seem concerned, it is wise not to interfere. Obesity is to be viewed as a complex medical problem and not as a moral issue. Scare propaganda is to be avoided. Informing patients about the caloric value of foods as a guide during treatment is valuable. Exercise should be encouraged. It is a sound way of using up ingested calories, and it helps to promote nitrogen balance and muscle tone. The diet should be low in calories but contain an adequate amount of protein. Skim milk should be used. For nibbling while watching television, raw vegetables (carrots, cauliflower, and the like) may be substituted for foods of higher caloric value. In prescribing diets for children, specific directions are necessary. General instructions, such as cutting down on starchy foods such as bread and potatoes, are of little value. A reasonable diet to start with in an adolescent is 1200 calories.

THE LANCET

No. 7068, February 14, 1959

Gastrointestinal protein loss in idiopathic (hypercatabolic) hypoproteinemia. M. Schwartz and S. Jarnum.—p. 327.

*Milkborne streptococcal sore throat. P. J. Taylor and M. A. McDonald.—p. 330.

No. 7069, February 21, 1959

*Instability of radioactive vitamin B_{12}. E. L. Smith.—p. 387.

*Egg-containing meals and blood coagulation. E. Orma, D. N. Rhodes, and A. Keys.—p. 388.

Milk-Borne Streptococcal Sore Throat. Three epidemics of food-borne tonsillitis affected 835 airmen, 120 of whom had scarlet fever. The cause in all three outbreaks was *Streptococcus pyogenes*. The evidence suggested that milk was the vehicle in infection. The clinical features were similar to those in previously recorded food-borne epidemics. There were few complications. There was a much lower susceptibility to the disease in patients who have a past history of tonsillectomy.

Instability of Radioactive Vitamin B_{12}. Vitamin B_{12} labelled with any of the radioactive cobalt istopes is liable to decompose on storage. The rate is unpredictable and shows no evident correlation with specific activity, nature of the cobalt isotope, or concentration of the aqueous solution. When deterioration occurs, radioactivity measurements are no longer a reliable indicator of vitamin B_{12} content, because other radioactive cobalt compounds are present. It is advisable that stocks should be retested for radiochemical purity at intervals of one month or less.

Egg Intake and Blood Coagulation. Nine middle-aged physically normal men (chronic schizophrenic patients in a mental hospital) after 10 hr. fasting, were given a virtually fat-free test breakfast containing sucrose, rice, and non-fat milk solids providing 1078 calories or a breakfast of dry toast, jelly, coffee, and a scramble of: (a) 3 whole eggs; (b) 3 egg whites plus the total lipids of 3 eggs; (c) 3 egg whites plus the lipids of 3 eggs from which the phosphatidyl ethanolamine-free lipid had been removed; (d) 3 egg whites plus egg lipids equal in weight to the total lipids of 3 eggs from which all phospholipids had been removed; or (e) 3 egg whites. The total lipid of 3 eggs (13.5 gm.) produced a significant shortening in plasma coagulation times. Removal of the total phospholipids or of the phosphatidyl ethanolamine from the egg lipid did not significantly alter the result. The whole blood coagulation time was not significantly shortened by the ingestion of this amount of egg lipids.

NEW ENGLAND JOURNAL OF MEDICINE

Vol. 260, February 19, 1959

*Treatment of pernicious anemia by oral administration of vitamin B_{12} without added intrinsic factor. E. A. Brody, S. Estren, and L. R. Wasserman.—p. 361.

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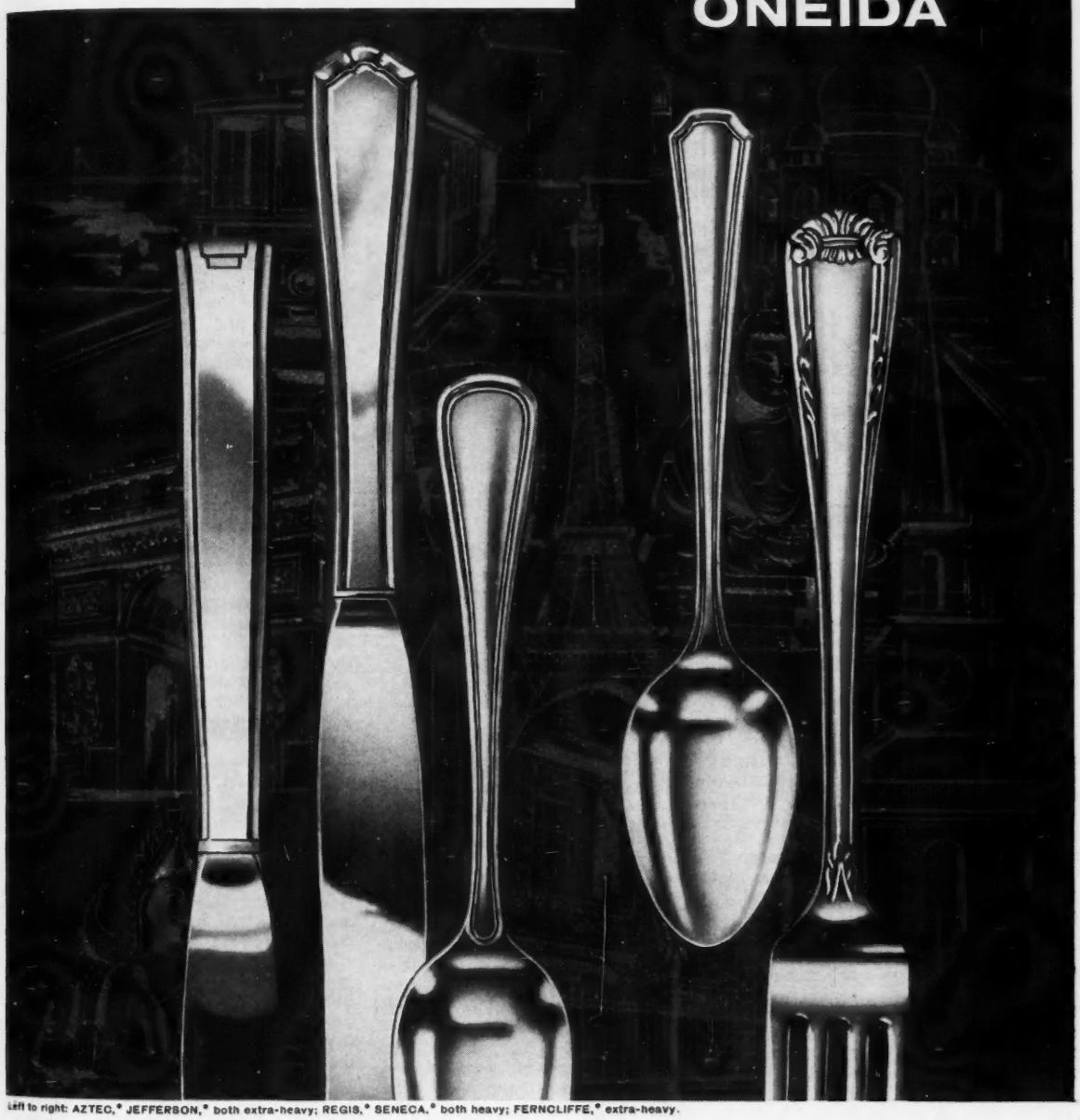
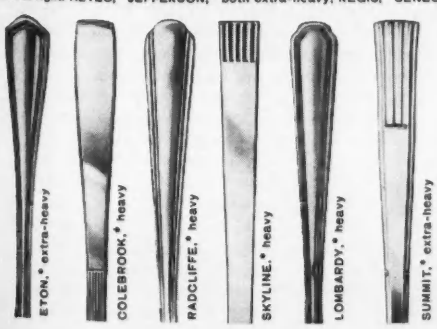


Left to right: AZTEC,* JEFFERSON,* both extra-heavy; REGIS,* SENECA,* both heavy; FERNCLIFFE,* extra-heavy.



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Treatment of Pernicious Anemia. Fourteen patients with pernicious anemia, two patients with total gastrectomy, and one patient with malabsorption syndrome were treated with orally administered vitamin B_{12} in doses of 50 mcg. three times daily for periods of two to thirty-four months. Complete hematologic and clinical remissions were induced in eleven patients with pernicious anemia, one patient with total gastrectomy, and the patient with malabsorption syndrome. Responses to the therapy in the remaining four patients were excellent, but not optimal. Neurologic deficits of varying degree were present in six patients. These disappeared or were partially corrected in five patients but were unaltered by therapy in the other. Normal levels of serum vitamin B_{12} were reached in three patients with pernicious anemia and in two patients with total gastrectomy. The serum vitamin B_{12} remained at subnormal levels in the remaining twelve patients. These results are regarded as agreeing with the concept that the absorption of large doses of vitamin B_{12} is not dependent on the presence of intrinsic factor.

NEW YORK STATE JOURNAL OF MEDICINE

Vol. 59, March 1, 1959

*Some practical aspects of iron metabolism. J. H. Fryer.—p. 873.

Iron Metabolism. Current concepts of iron metabolism support the existence of symptomatic iron deficiency without anemia. Patients with such states will be recognized only if the diagnosis is considered. Some cases may be resistant to oral therapy because of limited net absorption, regardless of oral intake. Parenteral therapy may then be indicated. Conversely, excess iron in the body cannot be readily excreted. For this reason, the parenteral route should be used only when deficiency has been reasonably demonstrated. In most but not all cases of hemosiderosis, the excess storage iron is relatively nontoxic and the control of absorption is maintained. Primary or idiopathic hemochromatosis, however, is probably due to a metabolic aberration, and excessive iron absorption leads to deposition of storage iron in parenchymal sites and chronic tissue change.

NUTRITION ABSTRACTS & REVIEWS

Vol. 29 January 1959

*Nutritional significance of recent work on wheat, flour and bread. T. Moran.—p. 1.

Wheat, Flour, and Bread. This review, which covers roughly the past ten years, presents areas of research on wheat, flour, and bread. Enrichment of flour, nutritive value of different breads, composition of wheat, and distribution of vitamins within the wheat grain are some of the topics discussed. An extensive analysis of proteins is covered, including the distribution of protein within the wheat grain, amino acid composition, nutritive value of bread protein and high-protein flour. Lipids also are considered, and it is suggested that in the next ten years there will be great advances in the chemistry and nutritional importance of wheat lipids.

NUTRITION REVIEWS

Vol. 17, March, 1959

*Adaptation to lactose. L. A. Herzenberg and L. A. Herzenberg.—p. 65.

Adaptation to Lactose. Hydrolysis of lactose is catalyzed by lactase, an enzyme present in the small intestinal mucosa. It has been shown that lactase production by the intestine is an adaptation to lactose. The animal has two mechanisms for dealing with lactose. The infant is provided with a mechanism which, even before birth, has begun to raise the lactase level in the cells of the intestinal mucosa. This level, generally highest soon after birth, falls slowly until it reaches a basal level after weaning. Then the basal level prevails, and in order to handle large amounts of lactose, the animal is forced to resort to a second mechanism, that of increasing the mass of the intestinal mucosa to have sufficient lactase to deal with the increased dietary burden.

PROCEEDINGS OF THE NUTRITION SOCIETY

Vol. 18, No. 1, 1959

*The human factor in hospital feeding. B. R. Stanton.—p. 8.

*Some experiences in group nutrition. J. J. O'Dwyer,—p. 13.

*The feeding of women in industry. P. Roscoe. —p. 22.

The human factor in school dinners. F. E. Morkam.—p. 24.

*Appetites in retirement: The organized feeding of old people. D. W. Newman.—p. 28.

*The occurrence of radiostrontium in foodstuffs. J. Hawthorne.—p. 44.

*Nutritional hazards caused by radioactive contamination of foods. G. B. S. Heath.—p. 49.

*Food and the periodontal diseases. E. W. Bradford.—p. 75.

*Dental caries in relation to nutrition: Structural effects. R. L. Hartles and G. L. Slack. —p. 79.

*Dental caries in relation to nutrition: Environmental effects. G. N. Jenkins.—p. 85.

The Human Factor in Group Feeding. Written by a dietetic and nutritional adviser of a London hospital, this article considers some of the human hazards which can affect food from the moment it is bought to the time it reaches the patient's plate. Examples are taken from the caterer's department, from those engaged in food transport and in the service of meals.

Experiences in Group Nutrition. A medical advisor, who has spent much time in the Royal Army Medical Corps, presents knowledge of things seen in the past in an effort to keep in perspective the problems of today. Accustomed to gross nutritional problems, he gets somewhat impatient of minute problems. He is concerned, however, that people eat a well balanced diet and that vigorous efforts be made to raise hygienic standards in all canteens.

Feeding Women in Industry. A catering manager expresses her views of feeding women in industry. She feels that women are less conservative than men about what they eat and more enterprising in trying new dishes.

Feeding Older People. The older person's reaction to feeding is reflected either by a compensative overeating resulting in obesity or an apathy extending to disinterestedness, resulting in malnutrition. This paper presents some of the aspects of organized feeding of older people in England. A meals-on-wheels service is provided for the house-bound, and centers where meals are served are provided for those who can get out. For older people who can no longer fend for themselves and have no one to care for them, accommodation in a home is the inevitable solution.

Radiostrontium in Food. This paper from the United Kingdom points out that there are some factors which contribute to a useful degree to protection from fall-out of radiostrontium. For example, in the process of absorption, animal digestive systems discriminate against strontium in favor of calcium. Also, in human digestive processes, calcium is favored. In the preparation of foods, it is felt that the parts of plants that are discarded, such as peelings and outer leaves, are of higher activity than the parts consumed. The effect of cooking on strontium levels in foods is currently being investigated. Of all of these, however, the ability of the cow to discriminate against strontium in milk production is the most significant.

Radioactive Contamination of Foods. This paper covers various aspects of the contamination of herbage by radioactive material. Isotopes that may contaminate crops are listed, and it is concluded that radio-iodine and radio-strontium are the most harmful. Contamination of crops and soil, effects of radiation on animals, and radiation sickness are discussed. Food inspection of meat and milk from contaminated animals is stressed.

Food and Peridontal Diseases. Of the two dental-disease groups—dental caries and periodontal diseases—by far the greater number of teeth are lost as a result of the latter. Local effects and systemic effects of the diet are discussed. In regard to local effects, the optimal diet is low in refined carbohydrate, high in fibrous content, and with a long stay in the stomach so that eating is less frequent. The systemic effect of the diet is purely theoretical and is concerned with dietary deficiencies.

Dental Caries and Structural Effects. The part played by adequate nutrition in preventing dental caries is still obscure. Reduction of caries in children during the war is unlikely

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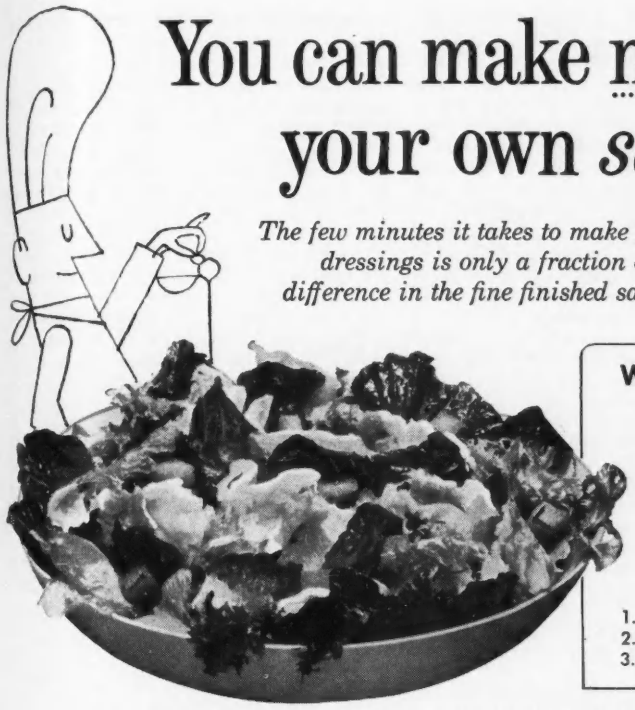

The few minutes it takes to make your own distinctive Wesson Oil dressings is only a fraction of total salad pantry time. But what a difference in the fine finished salad you serve your customers!

Wesson's 3-to-1 Basic French Dressing

Approximate Yield: 1 Gallon

INGREDIENTS	AMOUNT
Wesson Oil	3 quarts
Vinegar	1 quart
Salt	5 tablespoons
Sugar	3 tablespoons
Paprika	2 tablespoons
Pepper	1 tablespoon

1. Combine all ingredients, beating with a wire whip.
2. Shake or beat well before serving.
3. Store in covered container.

DRESSING VARIATIONS FOR ONE QUART OF 3-TO-1 BASIC FRENCH

BLEU CHEESE OR ROQUEFORT

4 ounces cheese, ½ cup cream. Blend cheese and cream before adding 3-to-1 Basic French. Refrigerate.

Just imagine . . . only 4 ounces of cheese per quart of dressing! The secret's in the cream and the way delicate Wesson Oil enhances food flavors.

BROWN SUGAR-LEMON

¾ cup brown sugar, 3 tablespoons lemon juice, 1 tablespoon grated lemon peel.

At last—Wesson Oil solves the problem of how to put an extra-special spark in fruit salads. And brown sugar doesn't separate like honey.

ANCHOVY-GARLIC

½ cup chopped anchovies, 6 to 8 minced garlic cloves, ¼ cup chopped parsley. Keep refrigerated.

GOLDEN GATE

2 or 3 eggs, slightly beaten. Also make seasoning additions from other variations. Keep refrigerated.

CHIFFONADE

4 hard cooked eggs, 4 small beets, 4 small onions, all finely chopped.

For vegetable salads or lettuce hearts, a colorful dressing that tastes as good as it looks—thanks to Wesson Oil. Try it . . . and taste for yourself why Wesson is America's largest selling salad oil.

HERB

¼ cup chopped parsley, 2 teaspoons oregano, 1 teaspoon powdered thyme.

Those herb flecks give a subtle distinction to the fresh spring taste *and* look of your vegetable salads. It's easy to have imaginative salad variations with your own fine dressings made with all-vegetable Wesson Oil.

CELERY SEED

½ cup catsup, ¼ cup sugar, 4 teaspoons celery seed, 2 minced garlic cloves.

NEW ORLEANS

1 tablespoon prepared mustard, 1 tablespoon Worcestershire sauce.

LORENZO

Use only 1 pint of Wesson's 3-to-1 Basic French Dressing. Add 1 pint chili sauce, 1 pint chopped water cress, 1 tablespoon grated onion.

The way Wesson Oil brings out the luxurious taste of water cress makes Lorenzo worthy of your finest shrimp, lobster or crab meat salads.

DRESSING VICHYSSOISE

1 cup cold mashed potatoes, ½ cup minced green onion or chives. Using a mixer, gradually blend 3-to-1 Basic French into potatoes. Refrigerate this thick dressing.

Those cold mashed potatoes act as a homogenizer and help carry the flavor—delicate as only Wesson Oil can make it. For vegetable, tomato or asparagus salads.

Shortening is no sideline with us . . . that's why Wesson is as light and fine as an oil can be!

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to have been caused by an increase in the consumption of protective foods, but rather by a decrease in sugar consumption. The only nutritional factor that has been proved of value in reducing the incidence of dental caries in man is the fluoride ion.

Dental Caries and Environmental Effects. This article is concerned with the environmental effects of dietary habits on caries. It is felt that there is a relationship between plaque *p*H and the decalcification of the enamel. This critical *p*H varies in individuals, depending mainly on their salivary concentration of calcium and phosphorus, but is usually stated to be between 5.0 and 5.5. Various postulations regarding dietary influences are given, but no definite conclusions are reached. In some of the situations, no experiments on human caries have been made. For example, in animal experiments the addition of sodium phosphate to a caries-producing diet reduces its effect, but evidence on human caries is lacking.

PUBLIC HEALTH REPORTS

Vol. 74, March, 1959

The APHA Conference report.

*Taste, odor, and cost balk food irradiation. L. E. Clifcorn.—p. 253.

*Says hungry nations must grow food. J. W. McNaughton.—p. 254.

*Old soldiers never diet. T. E. Friedemann, H. F. Kraybill, and C. F. Consolazio.—p. 255.

*Two poisoning outbreaks in Puerto Rico from salt preserved codfish. A. T. Masi, R. A. Timothee, R. Armijo, D. Alonso, and L. E. Mainardi.—p. 265.

Food Irradiation. Russia has authorized the use as food of potatoes irradiated with a 100,000-rad dose to prevent spoiling. The British report the destruction of Salmonella in frozen eggs appears to be their most promising and compelling use of irradiation. Before irradiated foods can be sold in the U.S., research must show what foods may be benefited and whether the benefits are sufficient to warrant capital expenditures and costs of educating the public to accept foods having new sensory characteristics and possibly new cooking requirements. The Food and Drug Administration must approve any irradiated food offered to civilians.

Hungry Nations Must Grow Own Food. Underfed nations must grow their own food if the levels of nutrition are to be raised. People cannot feed themselves properly unless the essential nutrients are available at a price they can pay. The task of the Food and Agriculture Organization is to raise levels of nutrition and to help improve agricultural production in member countries. Fish catches can be increased by introduction of modern methods, but in many countries, even where the population needs protein foods, there may be little demand for fish.

Army Nutrition. According to the Army basic standard, the minimum nutrient intake of the physically active soldier in areas of temperate climate should be 3600 calories per day; for troops engaged in outdoor activities where the prevailing temperature is subzero, the minimum should be 4400 calories. In surveys in four basic training camps, the average consumed by soldiers in the mess, at the post exchange, and from other sources was: 4265 calories, 131 gm. protein, 201 gm. fat, and 484 gm. carbohydrate.

Food Poisoning from Codfish. Two food poisoning outbreaks in Puerto Rico during the fall of 1957 were caused by Staphylococcal enterotoxin in salt-preserved codfish. The findings revealed that partial preservation of codfish by salting does not completely destroy contaminating organisms which have a high salt tolerance. In fact, the addition of suitable concentrations of salt may kill spoilage bacteria which might compete for growth with the Staphylococcus. This report has demonstrated the hazard of exposing salted codfish to water at environmental temperatures for extended periods before cooking.

SOUTH AFRICAN JOURNAL OF LABORATORY AND CLINICAL MEDICINE

Vol. 4, December, 1958

*The serum protein pattern and liver function tests in the Natal African. S. J. Powell.—p. 273.

*Serum-copper levels of the South African Bantu. J. J. Theron, B. J. Meyer and F. M. Conradie.—p. 294.

Serum Protein in the African. The typical European pattern of serum proteins and liver function tests is uncommon in Africans. This study is concerned with the Natal African laborer, who exists on a predominantly maize diet deficient in animal protein, and a higher African socio-economic group receiving a diet similar to that of Europeans. The serum albumin of the African laborer was significantly lower than that of the European or higher socio-economic African. The mean gamma globulin of the two African groups was similar, being significantly higher than that of Europeans. The etiology of these findings is discussed.

Serum Copper. Serum copper determinations were carried out on groups of male and female Bantu and Europeans of comparable ages. Children and pregnant women were also included in the study. The average serum copper concentration was higher in the Bantu than in the European. That of the Bantu children was higher than the average value for adults, and the pregnant women had higher serum copper concentrations than non-pregnant women. The explanation for the higher level of the Bantu is not clear.

SURGERY, GYNECOLOGY AND OBSTETRICS

Vol. 108, March, 1959

*Studies in metabolism of trauma. III. Postoperative sodium retention. H. E. Jorgensen and J. U. Schlegel.—p. 339.

Postoperative Sodium Retention. It has long been recognized that one of the metabolic changes in man following trauma concerns the handling of sodium. A subject exposed to trauma will, in regard to the urinary handling of sodium, behave like a normal person on a prolonged low-sodium intake, in that he may lose sodium on the day of trauma but then conserve it regardless of intake. As long as no fluid therapy is required, this will not present a problem because the patient is conserving his sodium at a time when no intake is available. If fluid replacement is necessary to maintain blood pressure and blood volume, difficulties are often encountered when the organism begins to mobilize edema fluid and, because of sodium retention, is unable to excrete the water. This study indicates that sodium excretion in postoperative patients is slightly higher when diuresis has been promoted by administration of a 4 per cent urea solution and that the commonly described postoperative sodium retention is thus prevented.

ADULT LEADERSHIP

Vol. 7, March, 1959

*Leadership for what—and for whom? H. Runner.—p. 253.

*The role of the administrator. G. A. Peck.—p. 261.

*Improving instruction through the workshop method. W. L. Stone.—p. 264.

The Problem of Leadership. The author points out the two main types of leaders—the authoritarian and the permissive. The characteristic qualities of each are defined, and the circumstances under which they best function are outlined. The point is made that one man cannot be all things to all men; thus the type or method of leadership must be adapted to the given situation.

The Administrator. The author writes that due to the democratic form of doing things, the current popular concept of administrators is that of an electronic brain that can sort out information. They are somehow vaguely felt to be ". . . acutely receptive assimilators of pertinent sentiment, and spokesmen for it." The author writes: "The democratic approach to the job of executing the polled wishes of the group is a machine-like negation of one's own brains and values—too often on the authority of highly placed models." The administrator appears to be one who substitutes his own principles, integrity, and creativity with what he skillfully adduces to be the judgment and wishes of his environment. This view of the administrator is shown in much of our current literature. The author further points out that "the role of the administrator is therefore not that of a recorder of current sentiment, but that of a perceiver of the humane values which that sentiment represents."

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d-Biotin is required for the growth of bacteria, plants and animals. It appears to be related to the process of cell development. The *d*-biotin content of embryo and tumor tissue is comparatively high. Nerve tissue growth is greatly stimulated in the presence of certain concentrations of *d*-biotin.

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ment is summarized. The major areas of college instruction were represented on the committee: physical sciences, humanities, and social sciences. This workshop was group-centered rather than person-centered and unusual in several other aspects. The procedures for organization and the objectives of the workshop are given in detail. Over-all conclusions as reached by the participating groups are reported. They involve the effectiveness of an unusually free and uncharted schedule of activities and topics of discussion and how these, through practical experience, could be related to classroom procedures. The emphasis of the workshop discussions was on learning and how instruction could facilitate rather than hamper learning.

AMERICAN RESTAURANT

Vol. 43, March, 1959

*Hamburgers . . . good and bad. G. L. Wenzel.—p. 57.

"Quick as a wink—prepared potato products.—p. 66.

Hamburgers. Is cooking an art, science, or profession? What was formerly an "art" has become a "science" through observation, study, and experience. "In specialty restaurants today, the professional spirit is the main reason these places succeed continuously." The "skill" and "dexterity" of the specialty house are achieved through rigid adherence to known and tested standards. Since even the good chef cannot guarantee a uniformly perfect hamburger every time, the author examines a few of the most common problems. In the first of a series of twenty-four articles, he discusses the factors which go into the making and serving of a good hamburger: the ingredients and proportions of each, garnishes, the grinding and mixing procedures, and how the menu price usually controls the quality.

Prepared Potato Products. Pointers on the preparation and service of tempting dishes made with the minimum of time, steps, and cost can be found in this article. New types of quick potato products have been produced from the long-famed Idaho-grown potatoes through modern freezing and drying methods. The griddle and fryer take on added importance with the advent of these products designed for accelerated cooking and serving. "In addition to the old standby French fries, new forms of potato products for quick deep frying have appeared," and the quick potato products are not limited in number to those for frying operations.

FOOD SERVICE

Vol. 21, March, 1959

*Report on dishwashing. J. R. Norris.—p. 30.

*Electromation: elimination of grease, gripes and grime. J. R. Norris.—p. 34.

*Quality china makes dishwashing easy. J. Chandler.—p. 40.

*A dozen ways to spice a hamburger. A. Goldsmid.—p. 48.

*A change of pace—a change of face. J. M. Rock.—p. 52.

Survey of Dishwashing. Much of the food industry is plagued by the problems inherent in dishwashing. *Food Service Magazine* has made a survey and has come up with some revealing facts and figures on the problem. "The only sure thing food service establishments get from their dishwashing departments is trouble. . . . Let's face it—it's purely a non-profit operation." Based on the findings of 1049 questionnaires and complemented by staff research, charts and graphs on the major problems of dishwashing are presented.

Electromation. "Dishwashing—where the glamour and profits stop and the grime begins . . ." The author shows how electric and mobile equipment and new detergents help to answer the "non-productivity" problem in dishwashing departments and claims that any improvement in dishwashing and sanitation cannot help reflecting itself in increased net profit. The author presents a full-page chart of the typical wage scales and hours for dishwashers, an illustrated layout for the essentials of the department, a general check-list for analyzing an operation, and a check-list of modern cost-saving tools for labor-free dishwashing.

Washing China. Big savings and all-around kitchen efficiency are said to be realized through proper handling of the modern, quality china which is rugged as well as decorative. This has mainly come about through the benefits of automation in the china industry as well as in dishwashing equipment. A revolution in china design has also accompanied the trend to automation. The author lists some pertinent questions which should be asked before initiating or revamping an employee training program. She urges, too, that whenever possible, "the use of equipment should be substituted for human hands," to insure the proper handling of china. "As a general rule," she claims, "the safest place for chinaware is in the dishwashing machine" and gives some breakage control pointers.

Hamburger. Make a better hamburger, and customers will beat a path to your door—and the author tells how to do it. Since the hamburger is a universal favorite, the mix must suit a wide range of tastes. He gives four ways to introduce some seasoning distinction. Included also are the recipes for a basic hamburger mix, sauce for hamburgers, and a green and red pepper relish.

Gourmet Menu Tricks. Whenever a food service format can create the "just for you" reaction in the customer, at precisely that point a repeater has been cultivated. Cost-wise and customer-wise, the basics of a menu need a critical and periodic reappraisal. More attractive menu descriptions are insurance against monotony, and special ways of serving popular foods are sure-fire cures for entrée doldrums. A good or regular customer finds it difficult to complain about consistently fine food, but if nothing ever changes, he no doubt will be bored with the monotony. The author suggests several "minor miracle-workers for menus."

HOSPITAL MANAGEMENT

Vol. 87, April, 1959

*Frozen eggs developed for hospital dietaries. B. Henick.—p. 84.

*Specifications for kitchen and food service equipment. L. C. LeGwin, Jr.—p. 114.

Frozen Eggs. Frozen eggs have had a successful market in institutions for almost sixty years. The "egg problem"—primarily that of quality control—is discussed. The author suggests several methods of insuring the high quality demanded by institutions. The necessary standardization of yield, quality, container size, and so on in regard to frozen eggs has recently shown positive developments. Hospitals have made numerous tests, such as time and motion studies, and many advantages of frozen eggs over shell eggs have been demonstrated. The author lists dishes in which frozen eggs have been used with success, indicating the wide range to which they are applicable.

Equipment Specifications. A set of specifications for kitchen equipment is presented by the author, who is Purchasing Agent for the James Walker Memorial Hospital, Wilmington, North Carolina. Also included are suggested instructions to prospective contractors on bidding procedures, general requirements for installation, guarantees and standards to be met, and so on.

HOSPITALS

Vol. 33, March 16, 1959

*Practical advice in planning, staffing and equipping the dietary department. R. Gordon.—p. 105.

Vol. 33, April 1, 1959

*Attractive tray appointments make good food seem better.—p. 66.

Planning the Dietary Department. The author presents a guide for planning, staffing, and equipping a food service facility in any size hospital. She elaborates on these six elements which she feels must be considered in any food service programming discussion: (a) factors used in determining types of food service; (b) estimation of equipment and staffing requirements; (c) methods of serving and distributing food to patients; (d) planning the kitchen and related facilities; (e) receipt, refrigeration, and storage of food; and (f) equipment selection and layout. She also defines the four functions (as she sees them) of the dietary department: administrative, therapeutic, educational, and research.

Attractive Tray Appointments. Food alone isn't the only way to inspire the hospital patient to follow his meal with a compliment to the dietitian. This discussion deals primarily with merchandising hospital food which consists of ". . . serving the food in

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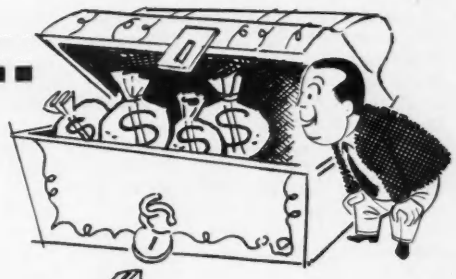

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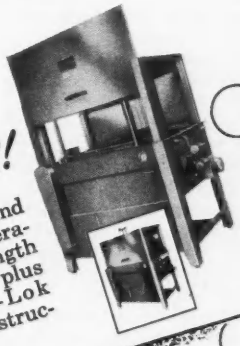

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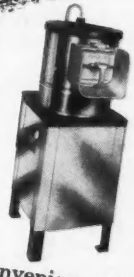

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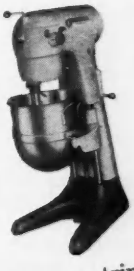

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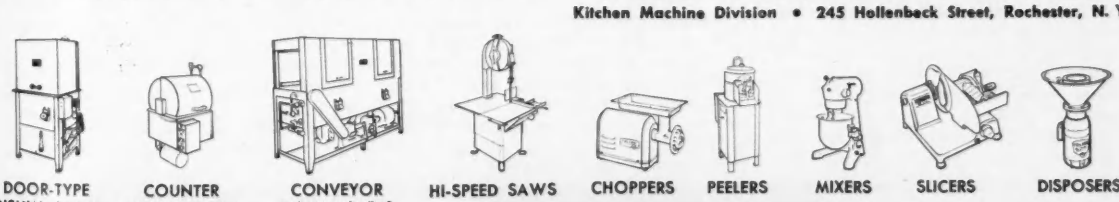

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an attractive manner so that the person to whom it is served feels compelled to taste it." In a Grand Rapids, Michigan, hospital, food is merchandised through a series of inexpensive tray appointments. Such things as bright paper tray covers and doilies, plastic dishes with circus motifs for the pediatric service, individual casseroles for spaghetti and other extender items, and individual green plastic shell dishes for seafood casseroles help to make the trays attractive. Many glass serving pieces are used as they tend to add elegance to food service.

IN-PLANT FOOD MANAGEMENT

Vol. 6, March, 1959

*Spice . . . its care and proper use. American Spice Trade Association.—p. 63.

Spices. As management turns more attention to selling food, spices are taking on new importance. The use of spices, herbs, and seasonings is one of the most creative aspects of cooking, but it requires careful handling and a trained soft touch. "Few other food ingredients have as much merchandising potential as these pungent bits of roots, fruits, seeds and leaves." Again from management's point of view, good seasoning is a "plus" in food service that is inexpensive, and it seems that we are in the midst of a rebirth of the use of spices in U.S. cooking. Contrary to popular opinion, even relatively inexperienced cooks can pick up the art of good seasoning quite quickly. General tips for cooks as well as a detailed chart for the uses of spices which can be posted near the preparation area are presented.

INSTITUTIONS

Vol. 44, April, 1959

*Training . . . today's key to success.—p. 6.
*Audio-visuals: Invaluable aids to training.—p. 8.
*Don't overlook the executive. F. W. Gleiser.—p. 10.
*A training school for food service personnel. K. T. Phillips.—p. 42.
*Color . . . dramatizes the table top.—p. 98.
*Establish food service sanitation plan. J. D. LaMothe.—p. 100.
*Color . . . in food service equipment.—p. 112.
*A short course in kitchen design.—p. 140.
*Basic course in food preparation.—p. 156.

Training—Key to Success. Assembled by the editors of *Institutions*, this series of articles surveys current trends in training because of the overwhelming importance of personnel development. The conclusion is that training is ultimately the responsibility of top management. In a question-and-answer session by a panel of industry leaders, such problems as, "What are the best techniques for training?" "Where can I get help?" "What are the associations doing?" and many others, are discussed.

Audio-Visual Aids. Carefully used slides, movies, flip charts, and blackboards can be important parts of any training program as they add the interest necessary to hold attention and to stress important points to the trainee or the experienced employee. There are many inexpensive and simple materials that allow for active participation by the trainee and are also on a level that is rewarding to those with a relatively low educational level. Bulletin boards, scrap books, blackboards, charts, posters, and models are some of these audio-visual tools which may develop gratifying enthusiasm and interest. Convenient sources for movie and slide film listings are given. Tape recorders, too, can be used to advantage. The article also contains a short summary on teaching techniques in conjunction with the use of a film.

Training the Executive. Modern administrators in the institutions field are beginning to recognize the growing professionalism necessary in every facet of their work. They also realize that all education and training efforts must begin with the top or executive management in order to be fully effective. The author describes the many continuing education programs in executive development being carried out by colleges and universities, professional associations — including A.D.A.—and the food service industry. A listing of short courses, institutes, and seminars designed for members of the institution management team is also given.

Organizing a Training School. How do you train workers who have only a minimum education and very little experience in commercial food preparation? This article reveals how the problem was met and solved in a school lunch organization. By devising a training program for workers that took into consideration the needs of the people involved as well as the best techniques of food preparation and sanitation, this author had most rewarding results. The organization, teaching methods, and the topics included in the training program are given.

Color at the Table. The entire décor of a dining room goes for naught if what is in front of the patron lacks impact, according to this author. "Consciously or unconsciously, the diner spends most of his time looking at the setting immediately before him. If he's disappointed by its lack of color, bored with the dull menu cover and copy, . . . he will *not* enjoy his meal *nor* sing the praises of your fine establishment." The author gives numerous tips for avoiding this potential problem.

Sanitation Program. The trauma of just one food poisoning incident can be the electrifying force behind the instigation of a thorough and efficient food service sanitation program. The author relates such an event and what was done to combat this universal potential threat. A detailed list of the measures which should be taken to prevent food contamination is given. Also described is how they can be organized into an effective and economical system.

Color in Equipment. Now that there is a trend for more and more operations to move their food preparation or finishing areas into plain view of the patron, color is assuming an important role in the equipment used. Increasing numbers of items in newer, brighter packages are being produced by the manufacturers of heavy-duty equipment for the food industry and some of them are described by the author.

Kitchen Design. In this fourth of a series on kitchen design and requirements, the author outlines the principles basic to the design of all types of cooling equipment. It is written as an aid in specifying equipment and based on the fact that no modern food service operation can exist without adequate refrigeration.

Training in Food Preparation. A basic training course designed primarily for unskilled employees in the food service field was developed at Florida State University and a pilot course was successfully conducted at Florida A. & M. University. The third cycle of the training program is presented in this fourth installment of a series. The mechanics of the training procedure are briefly outlined and the subjects comprising the third cycle are discussed in detail. Included are: poultry preparation and cookery; the use of spices and seasonings; preparation and service of hot tea; and an introduction to food service safety in operating food preparation and dishwashing machines. In a section on food distribution and service, the duties of the waiter and bus boy, dining room side work, and table settings are covered.

THE MODERN HOSPITAL

Vol. 92, March, 1959

*Production line produces good food service. C. E. Vadakin.—p. 132.
*Dish machines washes out a labor problem. P. J. Spencer.—p. 146.

Centralized Food Service. Teamed up with a punch card system for selective patient menus, the centralized kitchen of the 312-bed Memorial Hospital, Wilmington, Delaware, has reported achieving major operating economies in portion control and labor costs. Five years ago a hospital food service consultant was employed who designed a centralized kitchen with an assembly line method of preparing trays. Through the use of individual vacuum-sealing, insulated containers for hot foods, patient complaints about the food service have been reduced to virtually none. Major savings were realized with the installment of a centralized service with regards to equipment, meal costs, time spent in food preparation and delivery, and the number of employees required. Also, sanitation procedures can be easily maintained at a high level.

Dish Machine Washes out a Labor Problem. The author's subject concerns a rather typical problem encountered in most food operations in a hospital, i. e., that of dishwashing equipment

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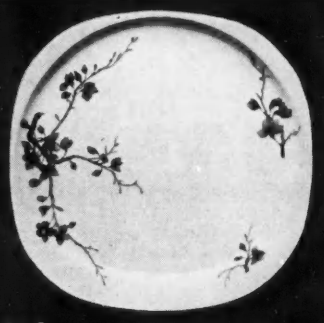

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and procedures. He cites a solution to this "kitchen-pest" through the installation of a newly developed automatic unit which performs near-magic in economy, efficiency, and sanitation. One feature of this dish-washing unit is that 98 per cent of the food soil is automatically removed from the dishes and deposited directly into a disposal unit before entering the machine. Therefore, the water remains clean at all times and eliminates the need for any "special" procedures in handling glasses. This particular hospital realized savings of 18½ man-hours per day because dish machine operators have no place in this system. The author claims that dollar savings, cleaner dishes, reduction of breakage, smaller and more efficient use of floor area, virtual elimination of noise and confusion, and the attraction of a higher type of employee were brought about by the installation of this revolutionary machine.

RESTAURANT MANAGEMENT

Vol. 84, March, 1959

*What do you know about lamb? A. Easton.—p. 65.
*Lamb goes with . . . ? A. Easton.—p. 70.

Lamb Possibilities. As a part of a special section on lamb in this issue, the author reviews some of the things that you probably already know about lamb and suggests new ways to bring variety to menu planning. The age of lamb is important both in determining price and the best way to cook a particular cut of meat. Pointers for a buyer to use in judging lamb are listed. Recipes are given, along with the cuts of meat available for roasts, chops, steaks, cutlets, and so on, and how each should be prepared.

Lamb Accompaniments. "The lamb you serve may be judged by the company it keeps." The author negates, by her contribution of many alternative suggestions, the common concept that lamb must, almost of necessity, be accompanied by some sort of tart jelly. Because of the distinctive and delicate flavor of this meat, it is complemented by a sharp or contrasting flavor, but we needn't stop there. Some people object to an "unpleasant taste" in lamb. The fault is said to lie in improper service and not the quality of the meat itself. Also presented are suggestions on what vegetables and garnishes to serve with various lamb dishes.

SCHOOL LUNCH JOURNAL

Vol. 13, March, 1959

*Here's how to write school lunch equipment specifications. D. Bilger.—p. 20.
*Standardized recipes—make food look good . . . taste good . . . smell good. A. P. Teske.—p. 62.

Specifying Equipment. The author defines kitchen equipment specifications as the buyer's descriptions of articles to be purchased. They must, therefore, be simple, flexible, definite, and fair to insure the receipt of the desired articles. She goes on to relate the necessary factors which must be included to make up accurate specification lists and how to use them effectively. She believes: "The provision of adequate equipment for the anticipated activities should be paramount. The floor space to house the necessary equipment should be secondary."

Standardized Recipes. Pointing out that standardization does not eliminate art (and cooking is an art) but merely makes the artistry consistent, the author itemizes the pertinent factors to be considered in developing a recipe which reflects group consent within a particular situation. Also described are the tools necessary for standardization, such as the available equipment, how the recipe should be written, ways of evaluating a new recipe, and so on. The many advantages are listed and what must be done to maintain the high performance brought about by attention to detail, by effort, and by work. "Good food doesn't just happen."

VOLUME FEEDING MANAGEMENT

Vol. 12, March, 1959

*Dinner pail catering.—p. 10.
*Cut costs with modern preparation and serving methods.—p. 14.
*How to plan your business expenses. P. Dukas.—p. 16.
*Rice: a triple play for profit.—p. 36.
*Good record keeping trims buying costs. E. C. Hunter.—p. 74.
*Spring is the time for rhubarb. R. A. Seelig.—p. 86.
*How to buy radishes. R. A. Seelig.—p. 86.

Home-Delivered Meal Business. An American version of a Cuban residential catering service has met with considerable success in the Miami, Florida area. Through this service, hot dinners are delivered each evening except Sunday to more than nine hundred homes. The menu system, which is offered on a weekly basis, makes the food preparation and buying not only easier but quite exact, because precise weekly estimates can be made prior to food purchasing. The major portion of the clientele consists of bachelors, working girls, and families where both the husband and wife work. Both American and Spanish-style foods are featured on the menu. Charges to customers are reasonable: $10 plus sales tax and $1 for delivery per week for six dinners for two people. Payment for a week's service is collected in advance at the time menu selections are collected.

Electronic Oven in a Hospital. A California hospital uses two aids in cutting feeding costs—electronic ovens and all-paper service. After one year of operation, this 58-bed hospital reported savings of over 30 per cent in labor costs and 20 per cent in raw food expense. With no addition to the present kitchen staff of eight, the hospital could expand to 100 beds, which would mean a savings of six additional dietary employees if the national averages are used. The food is cooked and the trays prepared in advance of meal hours; immediately

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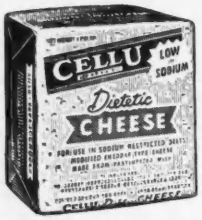

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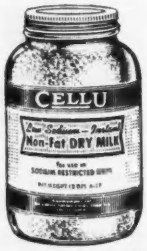

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prior to serving, the hot items are reheated in the microwave ovens in a matter of seconds. Numerous other advantages to this system are also explained.

Planning Expenses. A budget program based on the "break-even" point is described. The plan involves the installing of a system which declares that the time to control or eliminate costs is *before* the costs are incurred, not after. Graphs, figures, and methods for establishing this system are presented.

Rice for Profit. There are many advantages to using rice as an accompaniment, extender, or dessert, but rice that is steam cooked in an oven is even more advantageous. The author describes the ease of preparation of this method, as well as the great variety of uses to which it can be put. Oven-steamed rice has almost unlimited use as an accompaniment. Baked rice puddings make old-fashioned but popular desserts. Rice can be toasted in the oven before steaming, to produce an attractive brown appearance. Pan-frying before oven-steaming provides rice for such menu items as Turkish *pilafs*, Italian *risotto* dishes, and *paella* from Spain.

Centralized Buying and Record Keeping. Centralization of purchasing and record keeping by a school district with twenty-four cafeterias resulted in two major advantages : (a) large-quantity buying netted a savings of $25,000 a year and (b) personnel within each cafeteria were relieved of the clerical aspects of food purchasing and accounting. The system is set up so that the individual cafeteria manager or dietitian retains control. The author gives a detailed report of how the system operates and the records necessary to maintain efficiency and quality.

Rhubarb. Availability of rhubarb is given in percentages of the annual total. May and June top the list. The qualities of good rhubarb are described and also the locations of where most rhubarb is grown and how it is generally marketed.

Buying Radishes. The author tells how new techniques in marketing have made radishes available in ready-to-use form. He gives the main factors to look for in purchasing them, such as: crispness, tenderness, and taste. A brief summary of grading standards is given as well as proper methods of storing radishes.

WHAT'S NEW IN HOME ECONOMICS
Vol. 23, April, 1959

*Baking lesson for conventional-method cake. —p. 14

Cake Baking. Principles for the foods teacher to bring out in lessons on cake baking are pointed out, as well as qualities to be considered in evaluating the finished product. Reasons for thirteen "symptoms" of failure in cake baking are given.

THE BEST FOOD DESERVES THE FINEST CRACKER

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Your customers will appreciate these finer saltine crackers. They're tastier, flakier and snapping crisp. These top-quality crackers are always perfect in our moistureproof cellophane packets.

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Your Annual Meeting—Los Angeles: August 25-28

Gold nuggets lured the forty-niners westward a hundred years ago—but useful, up-to-the-minute information, dispensed by speakers of note is attracting fifty-niners from all states to California this summer.

Take advantage of education in palatable, capsule form by attending the Annual Meeting this year. From the following portions of the program, you can see for yourself the wealth of absorbing material which will be yours for the taking.

MONDAY, AUGUST 24

Morning and Afternoon—Meeting of the House of Delegates

TUESDAY, AUGUST 25

Morning—Official opening of the exhibition hall at 9:30; Meeting of the House of Delegates

Afternoon—FERN GLEISER, Professor, Institution Economics and Management, School of Business, University of Chicago: *The dietitian—an executive*

RUSSELL B. WILLIAMS, Associate Administrator, University of California Hospital, Los Angeles: *A budget works for you*

ERNEST GOLD, M.D., Research Fellow, Department of Medicine and Metabolic Unit, University of California Medical Center, San Francisco: *Dietary management in the therapy of selected endocrinopathies*

Evening—LAURENCE W. KINSELL, M.D., Director, Institute for Metabolic Research, Alameda County Medical Institutions, Oakland, Coordinator and participant on a panel discussing: *Latest findings in atherosclerosis research.* Participating:

DAVID B. CARMICHAEL, M.D., F. A. C. P. Physician and Vice President of the San Diego Heart Association, La Jolla

JESSIE MARMORSTON, M.D., Physician, Beverly Hills

WEDNESDAY, AUGUST 26

Morning—KATHLEEN E. ROBERTS, M.D., Assistant Clinical Professor of Medicine, Stanford University and Assistant Chief of Medicine, U.S. Public Health Service Hospital, San Francisco: *Electrolyte alterations and diet in renal disease*

WILLARD R. CENTERWALL, M.D., Assistant Clinical Professor, College of Medical Evangelists, Los Angeles: *Relationship of nutritional deficiencies to mental health, in particular, phenylketonuria and the dietary considerations*

ROY L. SWANK, M.D., Head, Division of Neurology, University of Oregon Medical School, Portland: *Ten years' experience with a low-fat diet in the treatment of multiple sclerosis*

Noon—LULU W. HASSENPLUG, Dean, School of Nursing, University of California, Los Angeles: *Different types of nursing programs, their aims and differences in educational objectives—chiefly as related to the teaching dietitian*

Participating in this program will be panelists:

MILDRED BROWN, Director, Los Angeles County General Hospital

MARY KELLY, Dietitian, Virginia Medical College, Richmond

MARJORIE E. NEWTON, Instructor in Nutrition, University of California Medical Center, School of Nursing, San Francisco, will coordinate this session

Afternoon—EMIL M. MRAK, PH.D., Chancellor of the University of California at Davis (effective July 1). At present, Professor and Chairman of the Department of Food Technology, University of California at Davis: *New aspects of food technology*

HELEN K. SHAW, Food Editor, *Pacific Coast Record*, Los Angeles, will discuss: *Professional writing for the public*

KEITH THOMAS, Assistant to the Director, California Foods Research Institute, San Francisco, will offer practical suggestions on *Developing and writing for TV programs*

CORA E. KUSNER, Director of Dietetics, Colorado State Hospital, Pueblo, Colorado, and incoming President-Elect of the A.D.A.: *Administrative standards and terminology.* Another member of the Association will discuss the therapeutic aspects.

Evening—WILLIAM H. PEMBERTON, PH.D., Consultant in Psychology and Executive Methods, San Francisco: *Semantics in relation to communication between dietitians and other department heads, as well as with administration, employees, and patients*

THURSDAY, AUGUST 27

Morning—ARTHUR ROTH, M.D., Teenage Clinic, The Permanente Medical Group, Oakland, California: *Medical trends in teen-age health*

GLADYS EVERSON, PH.D., Chairman, Department of Home Economics, University of California at Davis: *Evidence of physiological (nutritional) needs of the teen-ager*

R. BRUCE KIRK, PH.D., Continuing Education Services Director of the A.D.A.: *Continuing education for Association members*

HAROLD A. HARPER, PH.D., Associate Professor of Biochemistry, University of California Medical Center at San Francisco: *A re-evaluation of the protein intake in liver disease*

Afternoon—BEATRICE FINKELSTEIN, Research Nutritionist, Wright Air Development Center, Wright-Patterson Air Force Base, Ohio: *Nutrition research for air vehicles of the future*

FRIDAY, AUGUST 28

Morning—MARJORIE M. HEMPHILL, Assistant Professor, Department of Institutional Management, Kansas State College, Manhattan, Kansas: *Latest findings concerning the quantity cookery research project of the North Central Region of the U.S.* At this session a staff member from the Western Utilization Research and Development Division, Agricultural Research Service, USDA, Albany, California, will present: *A review of the Division's time-temperature tolerance research program*

A. R. BEHNKE, Captain (MC), USN, Radiological Medical Director of U.S. Naval Radiological Defense Laboratory, San Francisco: *Alterations in gross body composition and configuration in relation to low calorie diets*

SAMUEL SOSKIN, M.D., Physician, Beverly Hills, California: *New findings in metabolism as related to low calorie diets*

Noon—AGNES FAY MORGAN, PH.D.: *Hypervitaminosis and parathyroid hormone studies in the light of recent developments*

Afternoon—FRED SCHMID, Fred Schmid Associates, Los Angeles: *Planning layouts for institutional food service departments—today and in the future*

EDITH A. JONES, chief, Nutrition Department, The Clinical Center, National Institutes of Health, Bethesda, Maryland: *What are our equipment needs?*

Last session Friday will close at 3:30 p.m.

POST-CONVENTION LEISURE

Whether you are a devotee of wings, sails, or wheels, plan now for your vacation. United Air Lines' Travel Service (Chicago office) will make arrangements to whisk you away to Hawaii, Alaska, Mexico, or other pleasurable spots. See the April and May issues of the JOURNAL.

IMPORTANT . . . MAIL YOUR APPLICATION PROMPTLY

Application for Housing Accommodations

THE AMERICAN DIETETIC ASSOCIATION

Los Angeles, California • August 25-28, 1959

For your convenience in making hotel reservations for the coming meeting of THE AMERICAN DIETETIC ASSOCIATION on August 25-28, 1959 in Los Angeles, hotels and their rates are listed below. Use the form at the bottom of this page, indicating your first, second and third choice. Because of the limited number of single rooms available, you will stand a much better chance of securing accommodations of your choice if your request calls for rooms to be occupied by two or more persons. All reservations must be cleared through the Housing Bureau. ALL REQUESTS FOR RESERVATIONS MUST GIVE DEFINITE DATE AND HOUR OF ARRIVAL AS WELL AS DEFINITE DATE AND APPROXIMATE HOUR OF DEPARTURE, ALSO NAMES AND ADDRESSES OF ALL PERSONS WHO WILL OCCUPY RESERVATIONS REQUESTED *MUST* BE INCLUDED.

Hotel	For one person	For two persons		Suites
		Double Bed	Twin Beds	
STATLER HILTON*	8.00-14.50	11.50-17.00	12.00-18.50	23.00-and Up
BILTMORE	7.00-14.00	9.50-16.50	10.50-17.00	20.00-30.00
MAYFAIR	6.00- 9.00	8.00-12.00	9.00-12.00	20.00-34.00
COMMODORE	4.00- 7.00	6.00-10.00	6.50-10.00	14.00-24.00
NEW CLARK	5.00- 6.00	6.00- 8.00	7.00- 9.00	18.00-24.00
MAYFLOWER	6.00- 8.00	6.00- 8.00	7.00-10.00	14.50-18.00
SAVOY PLAZA	6.00- 7.50	6.00- 7.50	7.50	
Motel				
CITY CENTER MOTEL	9.00-10.00	10.00-12.00	12.00-16.00	
HOLIDAY LODGE	9.00-	9.00-14.00	10.00-and Up	14.00-and Up
MOTOR HOTEL				
ROYAL VIKING	7.50-	8.50-and Up	9.50-and Up	11.00-25.00

In the event that the hotel room rate structure is changed prior to the above convention these rates will be changed accordingly.
*Headquarters hotel

ALL RESERVATIONS MUST BE RECEIVED PRIOR TO JULY 31, 1959.

Hotel Convention Reservation Bureau, A.D.A.
Los Angeles Chamber of Commerce
404 South Bixel Street
Los Angeles 54, California

Please reserve the following accommodations for: THE AMERICAN DIETETIC ASSOCIATION Convention in Los Angeles, California on August 25-28, 1959.

Single Room_____ Double Bedded Room_____ Twin Bedded Room_____

2 Room Suite_____ Other Type of Room_____

Rate: From $_____ to $_____

First Choice Hotel _____
Second Choice Hotel _____
Third Choice Hotel _____

Arriving at Hotel (date) _____ hour ____ A. M. ____ P. M. Leaving (date) _____ hour ____ A. M. ____ P. M.

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of *both* persons for *each* double room or twin bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

_____

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_____

(Individual Requesting Reservations)

Name _____

Address _____

City and State _____

If the hotels of your choice are unable to accept your reservation the Housing Bureau will make as good a reservation as possible elsewhere provided all hotel rooms available have not already been assigned.

Navy Appointment. Lt. Comdr. Elizabeth O'Malley, Medical Service Corps, U. S. Navy, has been appointed Assistant for Women's Specialist Section officers in the Navy's Medical Service Corps. Lt. Comdr. O'Malley will provide the director of the Medical Service Corps Division, Capt. L. J. Elsasser, MSC, USN, with professional advice and assistance in procurement, career management, and effective utilization of members of the Women's Specialist Section. This Section includes officers in the specialties of dietetics, physical therapy, and occupational therapy. The appointment as Assistant for Women's Specialist Section officers will be rotated periodically between selected officers in these specialties.

Lt. Comdr. O'Malley was commissioned in the Navy Nurse Corps in 1944; in 1957, she was transferred to the Medical Service Corps.

Nutrition Awards. The American Institute of Nutrition, at its annual dinner in April in Atlantic City, named *Dr. Grace Goldsmith* of Tulane University Medical School as the recipient of the 1959 Osborne-Mendel Award of $1000. Dr. Goldsmith was cited for her contributions in the field of macrocytic anemias (especially studies on the specific roles of folic acid and vitamin B_{12}); in the clarification of the relationship of tryptophan and niacin in human nutrition; and in the field of protein malnutrition.

At the same dinner, Dr. Harry E. Steenbock, University of Wisconsin, received the 1959 Borden Award in Nutrition for "long and continued investigation in the field of mineral metabolism, the relation of ultraviolet light to anti-rachitic activity, and the physiological chemistry of vitamin A and vitamin D." This is an annual award carrying with it an honorarium of $1000 and a gold medal.

Awards to Food Technologists. The Institute of Food Technologists, at its annual convention in Philadelphia last month, made three awards for outstanding work.

Dr. Samuel Lepkovsky, University of California, was named the recipient of the Babcock-Hart Award for 1959 because of his outstanding contributions to nutrition over the past thirty-five years. He was a pioneer in research in riboflavin, isolating it in crystalline form. He has also been concerned with research with pyridoxine. He identified xanthurenic acid. Other research which Dr. Lepkovsky has done has involved the browning reaction, which results from storage deterioration of a number of dried fruits and vegetables, causing a flavor change and nutritional loss.

The 1959 Nicholas Appert Awardee is *Dr. Berton S. Clark* of the Maine Sardine Canning Industry. Dr. Clark is well known in the canning, canmaking, and allied industries for his scientific contributions to their basic problems.

The third award, made for the first time, was the Industrial Achievement Award made to the *Eastern Utilization Research and Development Division* of the USDA's Agricultural Research Service for its development of potato flakes. First made commercially only a little more than a year ago, total production of potato flakes — a completely new dehydrated mashed-potato product—should reach 25 million lb. this season. Nationwide distribution to the retail and institutional trade is rapidly being approached, and this new product promises to boost potato consumption in this country.

Dietitians Named as *Institutions* Winners. At the National Restaurant Association convention in May, winners of the 13th annual food service contest of *Institutions* Magazine were named. Included in the roster of winners were four institutions, at which dietitians have played a key part in remodeling or installing new food service departments.

Among the *First Awards* was Passavant Memorial Hospital, Chicago, where Henriette D. Gebert is Chief Dietitian.

A *Merit Award* went to John Jay Hall Dining Rooms, Columbia University, New York City, where Anna Mae Tracy is General Manager of Food Service for the University Residence Halls.

Honor Awardees included: College of Medical Evangelists, Loma Linda, California—Lydia Sonnenberg, Dietitian; and Metropolitan State Hospital, Norwalk, California—Mrs. Helen B. Peal, Food Administrator.

Food and Nutrition Board Meeting. April 3 was the date of the fifty-fifth meeting of the Food and Nutrition Board in Washington.

The Board gave special attention to reports on progress in irradiation preservation of foods and to the role of nutrition in international aid programs. Dr. Herbert E. Robinson, Vice-President for Research, Swift and Company, summarized the variations in effectiveness of various amounts or sources of radiation in different kinds of foods as affecting safety, acceptability, and wholesomeness. He concluded: "Much more basic research needs to be done to establish radiation preservation as a workable food process."

Dr. William J. Darby, on behalf of the Food Protection Committee, announced two new publications: "Food Packaging Materials—Their Composition and Uses" (NAS-NRC Publication No. 645) and "The Safety of Polyoxyethylene (8) Stearate for Use in Foods" (NAS-NRC Publication No. 646). A revision is also in progress for "Principles and Procedures for Evaluating the Safety of Intentional Food Additives." The committee's report on carcinogenesis is progressing toward completion, and the preparation of a codex of food additives patterned after the Pharmacopeia is also contemplated.

For the Committee on Protein Malnutrition, Dr. W. H. Sebrell, Jr., reported that funds totalling $550,000 from the Rockefeller Foundation are being used for basic research on protein food resources in countries where protein malnutrition is prevalent. Some twenty grants are now active in about ten countries.

Dr. M. K. Horwitt and Dr. Richard Vilter reported on studies of vitamin E metabolism being conducted at Elgin (Ill.) State Hospital under Board supervision. After more than five years on diets deficient in vitamin E, subjects are showing some evidence of derangement of lipoprotein composition in erythrocytes.This effect is being studied in relation to ulcerogenic activity and hemorrhagic endarteritis in brain tissues.

The following foods will be in plentiful supply during June, according to the USDA:

Chickens—broilers and fryers
Milk and dairy products
Spring vegetables
Vegetable fats and oils

Frozen Foods for June. The following suggestions for the use of frozen foods in June are made by the National Association of Frozen Food Packers.

FRUITS AND JUICES

Concentrate for Lemonade and Limeade. An attractive addition to your beverage menu which can be made quickly by the addition of water.

Boysenberries. These large, juicy, rich-in-flavor berries make a popular pie-dessert.

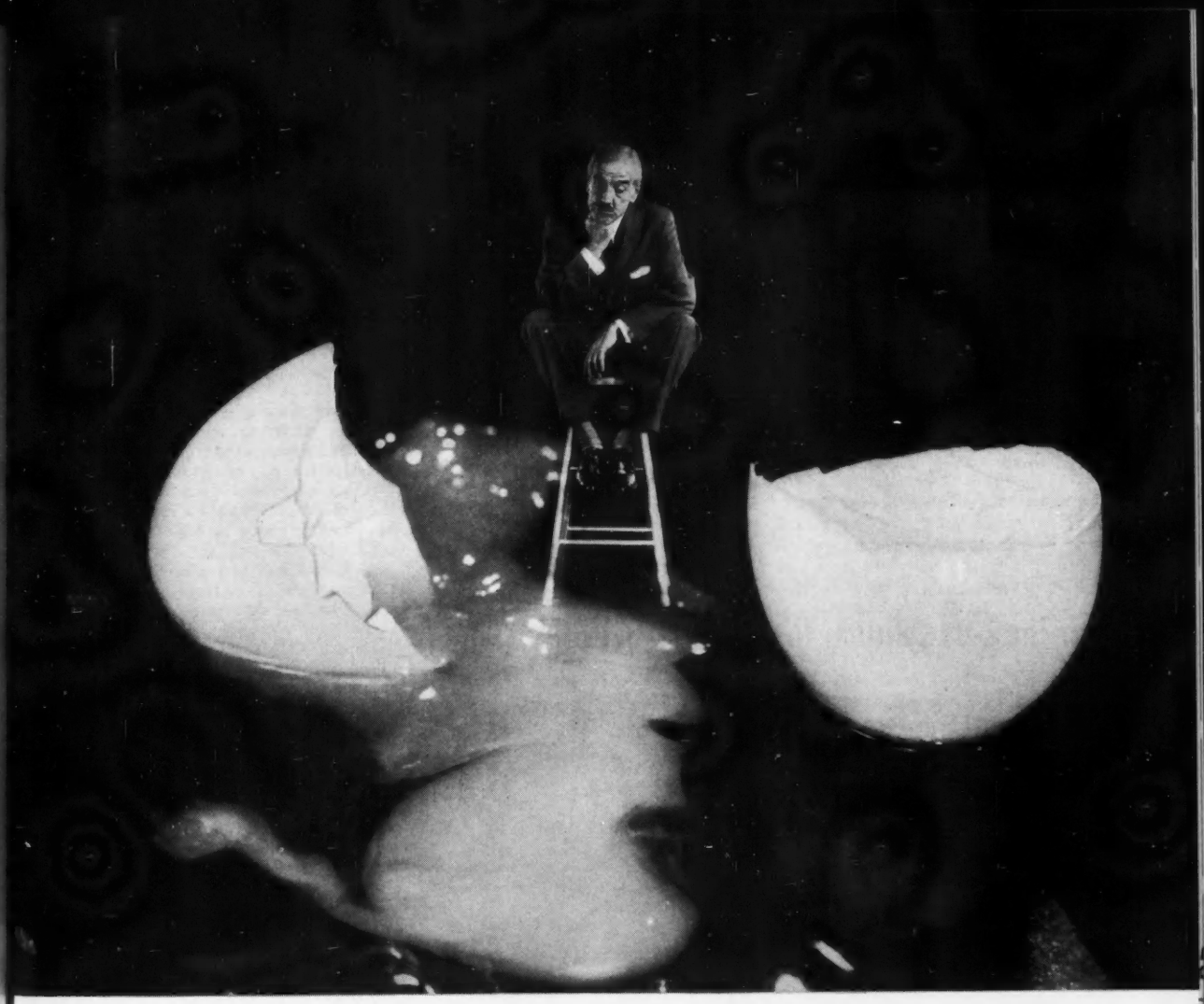
Red Raspberries. Use for decorative touches in salads and punches, as well as for pies and tarts.

VEGETABLES

Green beans—cut and French cut. For a low-calorie, popular, frequently chosen vegetable to serve as is, buttered, or "dressed up" with almonds, bacon bits, or a sauce.

Broccoli. The shapely stalk adds appeal to the dinner plate and is a winner with chicken or turkey divan.

Potato products. A no waste, minimum labor form for the ever-present potatoes on your menu.



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Recently Economics Laboratory chemists discovered that aeration and foaming inside a dishwashing machine cut down wash pressure 40 to 50 per cent. This drop in wash pressure reduces machine efficiency—promotes staining and film build-up and increases compound consumption.

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SCORE and EVENT control wash pressure chemically—they step up the efficiency of all mechanical dishwashing equipment—resulting in film-free tableware, lower operating costs in detergents and hot water. SCORE and EVENT have been scientifically developed and thoroughly tested by experts in the Laboratory and in hundreds of dishwashing operations throughout the country.

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June Meetings. The *Catholic Hospital Association* meets June 1 to 4 in St. Louis.

June 9 to 11 are the dates of the annual meeting of the *Canadian Dietetic Association* in Winnipeg.

Omicron Nu will hold its biennial conclave on the campus of the University of Wisconsin, July 18 to 20.

The fiftieth anniversary of the *American Home Economics Association* will be celebrated at its annual meeting in Milwaukee, June 23 to 26.

Minneapolis will be the scene of the 36th annual conference of the *American Physical Therapy Association*, June 21 to 26.

Artificially Sweetened Canned Fruit. New standards for artificially sweetened canned fruits have been developed by the Food and Drug Administration. This new regulation will permit the use of a water solution of a safe non-nutritive artificial sweetener in place of the usual sugar sirup to meet the needs of persons on sugar-restricted diets. Under the new standards, the words "artificially sweetened" will appear on the label as part of and ahead of the name of the fruit. Labels will also include the common name of the artificial sweetener, its percentage by weight, and the number of calories in an average serving. The standards will become effective before the end of the summer unless stayed by objections by persons adversely affected and will apply to artificially sweetened peaches, apricots, pears, cherries, fruit cocktail, and figs.

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Undersized or inadequate toasting equipment creates service delays and appetite appeal may be destroyed unless toast is served crisp, fresh and hot.

Savory automatic conveyor type toasters provide the greatest toast production possible—6 to 12 slices per minute—and perfect golden brown toast every time.

Ask your Kitchen Equipment Dealer to show you how Savory can speed up food service and provide greater economies, or write:

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120 Pacific St., Newark, N. J.

How to Write Pamphlets. The how-to-do-it of producing pamphlets, brochures, or booklets is the subject of a new pamphlet released by the National Publicity Council. Titled, *Pamphlets, How to Write and Print Them*, it is a guide by Alexander L. Crosby for persons who want their pamphlets to be *read* and who want to cut printing costs. Examples of good and poor writing, how to organize material, estimate space, prepare dummy, work with printers, and so on are topics which are covered. Illustrations show the difference between effective layout and dreary pages. A chapter on writing techniques lists the "Six Cardinal Sins": verbosity, pomposity, repetition, preciosity, dullness, and professionalism. Illustrations of ways to avoid them are given.

Copies of this pamphlet may be ordered for $1.25 each from: National Publicity Council for Health and Welfare Services, Inc., 257 Fourth Avenue, New York 10.

Cooking Fish and Shellfish. "Tips on Cooking Fish and Shellfish" is the title of an attractive folder recently issued by the Bureau of Commercial Fisheries, Fish and Wildlife Service, U. S. Department of the Interior. Included are recipes with such intriguing names as: "sea reef salad," "pizza of the sea," "schooner steaks flamingo," "Neptune's newburg," "tidewater delight," and "sea treasure Rockefeller." Each is scaled for six servings. Suggestions for purchasing and garnishes are also given. Copies are on sale at the Government Printing Office, Washington 25, D. C., for 10 cents each.

Career Booklet. "What's in Your Future—a Career in Health" is the title of a new Public Affairs Pamphlet (No. 281) by Herbert Yahraes. The pamphlet discusses occupational opportunities in the various areas of health work, with emphasis on professional vocations, and includes information on training and its cost. Types of organizations employing health workers are described as well as future prospects in the over-all field. Limited information about specific occupations, including dietetics, is included. Copies may be ordered for 25 cents each from Public Affairs Committee, 22 East 38th Street, New York 16.

Quantity Recipes. Fifty-two recipes for soups, main dishes, breads, salads, desserts, and sauces have been prepared by the Dairy Council of St. Louis in a packet titled, "Tasty Recipes for 50." The main dishes included will meet the protein requirements for Type A school lunches, as outlined in USDA Pamphlet PA 270, "Food Buying Guide." Each recipe is printed on a 5 by 8 in. card. Where variations,

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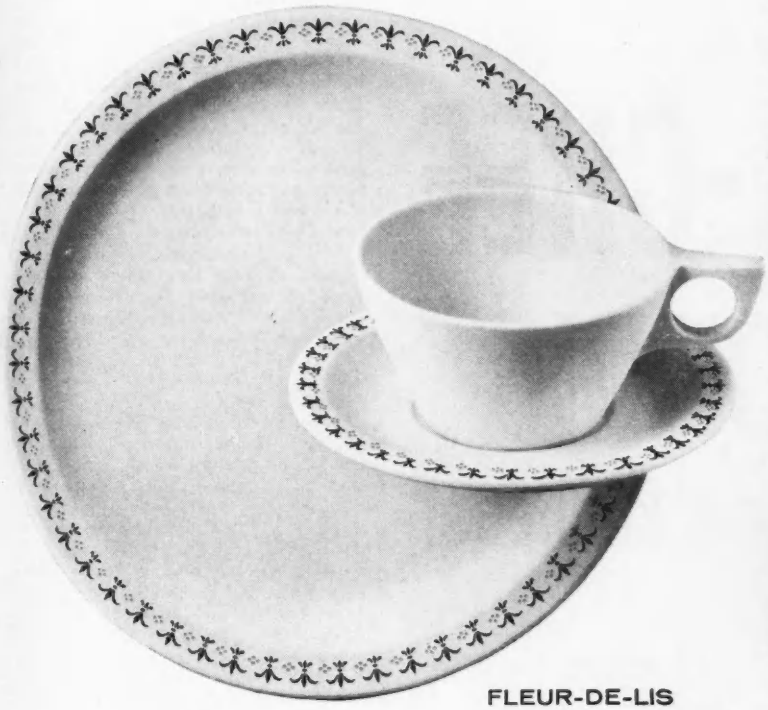

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Emphasis at the new high school is divided between spiritual, academic and physical development. The curriculum is fitted to the needs of all students: those who intend to pursue further studies and those who plan to work after graduation. Students take a basic two year college preparatory course after which those who wish may elect business and secretarial studies.

Appetites grow big during intense morning studies. And at the sound of the lunch bell, experienced cafeteria personnel are ready with well-balanced meals—meals TEXAS WARE helps keep piping hot. Molded-of-melamine TEXAS WARE was the natural choice of a school as modern as Cardinal Spellman High.

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as in the case of cooked dressing, may be made, instructions (including quantities of additional ingredients) are included.

Southeastern Hospital Conference of Dietitians. Atlanta was the meeting place for the eleventh Southeastern Hospital Conference of Dietitians. This organization encompasses six states: Alabama, Florida, Georgia, Louisiana, Mississippi, and Tennessee. The program featured:

"The Dietary Department through an Administrator's Eyes"—Michael J. Wood, Administrator, Duval Medical Center, Jacksonville, Florida

"Diabetes" — Dr. Christopher McLaughlin, Atlanta

"Effective Communications" — Dr. Michael Mescon, Georgia State College, Atlanta

"Sanitation in the Dietary Department"—Dr. J. E. McCrean, Georgia Department of Health, Chamblee

"Work Simplification"—Dr. Harold E. Smalley, Georgia Institute of Technology, Atlanta

"Public Relations Is Your Business" —Clarence Walker, The Coca-Cola Company, Atlanta

"Dietitians Meet Today's Challenge" —Dr. Doris Johnson, A.D.A. President-Elect and representative of the national Association

Gwendolyn Biggerstaff, Chief Dietitian, Kennestone Hospital, Marietta, Georgia, was installed as President of the S.E.H.C.D. for 1959-60.

At this meeting, the Georgia Dietetic Association announced the following scholarships for senior home economics students:

First place ($100)—Ruth Bishop, Georgia State College for Women, Milledgeville; second place ($50)—Clara Ann Bridges, Berry College, Mt. Berry; and third place ($50)—Nora Ann Langford, University of Georgia, Athens.

National Conference on World Health. May 7 to 9 were the dates of the Second National Conference on World Health held in Washington. Chairman of the meeting was Dr. Milton S. Eisenhower, President, Johns Hopkins University.

Seven special topics were taken up in panel discussions and study groups: (a) prospects for an International Health Year; (b) health and economic development; (c) health and the American image abroad; (d) problems of health in relation to population changes; (e) training and exchange programs of public health personnel; (f) international health and medical research; and (g) the role of non-governmental health organizations and individuals in the international promotion of public health.

Distinguished speakers scheduled to appear at this Conference included President Dwight D. Eisenhower; Arthur S. Flemming, Secretary of Health, Education, and Welfare; and Dr. Leroy E. Burney, Surgeon General, U. S. Public Health Service.

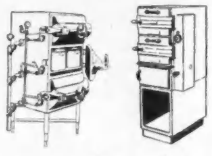
New White Bread Formula. The Navy's "Bayonne Bread Formula" was unveiled at the annual convention of the Associated Retail Bakers of America in Washington, D. C., in April. The formula was developed by the U. S. Naval Supply Research and Development Facility at Bayonne, New Jersey, in its work in designing food preparation facilities for the USS *Independence*, the fleet's newest attack aircraft carrier.

The Bayonne formula eliminates two time-consuming steps in bread-baking without loss of palatability or nutritional quality, the intermediate proof step and the final loaf-molding operation. Water, salt, and sugar content are reduced in comparison with old formulas, while yeast, shortening and nonfat dry milk are increased. Production of the new bread is somewhat unorthodox in that it requires a dough temperature of 86° to 88°F., a mixing time of 10 min. each for the sponge and dough states, respectively; a 10-min. sponge fermentation time and a 30-min. dough fermentation time, under 72°F. ambient shop temperature. Fermentation times may be reduced, of course, with higher shop temperatures.

The formula will allow ships with limited baking equipment to reduce total batch production time from a normal 5 to 6 hr. to 2 or 2½ hr. Two bakers can accomplish an average production rate of 160 loaves of bread per hour.

Again . . . in 1959 –

STEAM-CHEF IS THE CHOICE in award winners' kitchens!



For 13 consecutive years

Cleveland Steamers have been the overwhelming choice in Institutions Magazine Annual Food Service Contests

This year there were 7 First Award-winning kitchens. *Six* of these selected Cleveland Steamers. Altogether, 26 of 38 winning kitchens with steamers chose Steam-Chefs or Steamcrafts.

It can't be mere coincidence. Maybe it's because, for over 25 years, Steam-Chef has pioneered every major advance in steam-cooking. Or because Cleveland Range is the world's largest manufacturer of steam-cooking equipment *exclusively.* So, select Steam-Chef . . . the choice of winners! Send for complete information and the interesting booklet which explains the many advantages of steam-cooking.

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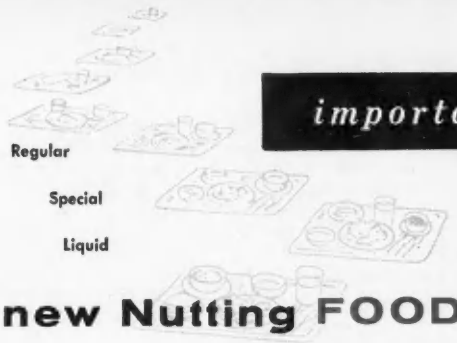
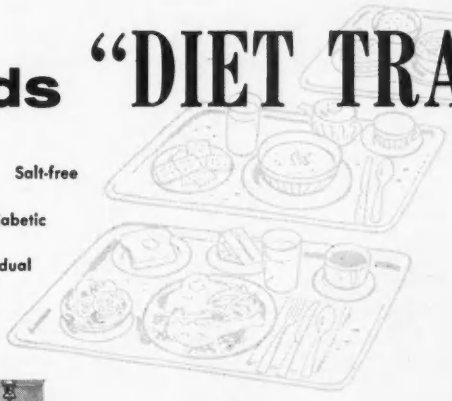
important FOOD SERVICE news



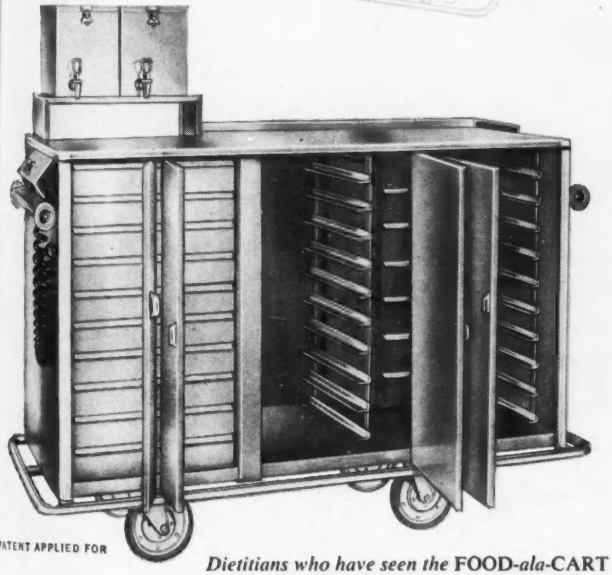
The all new Nutting FOOD-*ala*-CART System

ends "DIET TRAY CONFUSION!"



Here for the first time is a food service system that ends one of the biggest problems facing dietitians . . . "Diet Tray Confusion." FOOD-*ala*-CART is the first and only food service system to provide *one oven drawer* for *every serving tray!*

This exclusive FOOD-*ala*-CART feature ends "Diet Tray Confusion" and makes spot checking easier—more accurate. It also speeds tray assembly — makes it simpler.



PATENT APPLIED FOR

Dietitians who have seen the FOOD-*ala*-CART system say it's the easiest to use equipment they have ever seen. Its design is based on a comprehensive research study among dietitians. These dietitians told us it's not the fixing of the food but the serving that is the big problem. The Nutting FOOD-*ala*-CART answers the serving problem best because it simplifies it, ends "diet tray confusion," keeps foods appetizing, refreshing, delicious tasting right to the patient. It is truly *the new standard of fine food service for hospitals.*

Only the new FOOD-*ala*-CART system offers *all* these features!

- ONE OVEN DRAWER FOR EVERY SERVING TRAY ends "diet tray confusion." It's the easiest to use food service system you have ever seen.
- FROZEN FOOD SECTION keeps frozen desserts served in sliced form, in ramekins or similar containers *frozen;* even ice cubes won't melt.
- ALL FOODS are served at dietetically accepted temperatures for maximum patient "meal appeal."
- VERSATILE INTERIOR — Easily changed to accommodate 3 different tray sizes; no tools are needed. Can also be changed to handle from 16 to 24 trays. Interior can be easily and entirely cleared for steam cleaning.
- ROLLS EASILY — Large ball-bearing wheels with non-marking rubber tires especially compounded for easier starting, easier rolling.
- COMPACT SIZE makes FOOD-ala-CART easier to handle. Clears any hall, door or elevator opening.
- SAFER — Center hung door panels do not extend beyond cart when open.
- EASIER TO USE — EASIER TO SEE CONTROLS — There's no guesswork about this cart. All controls are up in plain sight, easy to see. Simple switches turn "ON" and "OFF". Refrigeration and heat controls are pre-set — require no adjustment by user.

Everyone is happier with FOOD-*ala*-CART! Patients, physicians, nurses, aids *and* dietitians, *all* like the way FOOD-*ala*-CART eases preparation, keeps foods appetizing and simplifies serving.

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Name of Hospital_____

Address_____

City_____ State_____

News of State Associations

Alabama Dietetic Association. On April 24 and 25, the Alabama Dietetic Association met in Birmingham. Features of the program were:

"Medical Aspects of Atomic Bomb Explosions"—Dr. Joseph Rogers Hood
"Aspects of Nutrition"—Dr. Thomas B. Patton

Dr. Ercel S. Eppright, A.D.A. Speaker of the House of Delegates, represented the national Association at this meeting.

Arkansas Dietetic Association. On May 13 and 14, the Arkansas State Board of Health and the Arkansas Dietetic Association cooperated in sponsoring an Institute for Food Service Supervisors in Little Rock. The program included:

"Seasonal Buying"—Mescal Johnston, U. S. Extension Food Marketing Specialist
"Communications and Motivation of Employees"—R. Bruce Kirk, Ph.D., Continuing Education Services Director, A.D.A.
"Purchasing Frozen Foods"—Pearl Llewellyn, Chief Dietitian, VA Hospital, Little Rock

Other "share and compare" sessions were concerned with purchasing meat, purchasing fresh fruits and vegetables, purchasing canned fruits and vegetables, and other buying problems.

On the afternoon of May 13, the Arkansas Dietetic Association held its annual meeting. All those attending the institute were invited to attend as guests.

Florida Dietetic Association. The *Jacksonville Dietetic Association* in January heard a discussion on educational television programs by the television coordinator for the Duval County Schools.

The *Lakeland Dietetic Association* entertained members of the Tampa Association in February with a trip to the Biological Research Institute of Florida Southern College. Dr. Boris Sokoloff, Director of the Institute, discussed current research related to nutrition.

The *Tampa Dietetic Association* in February held a career guidance tea for high school students. The Hillsborough Nutrition Committee cooperated. Workshops on sodium-restricted diets have been co-sponsored by the Heart Association in Tampa, Winter Haven, and various other cities throughout the state, and consultation services on diet are being offered at the Heart Association.

Indiana Dietetic Association. On April 22 and 23, the Indiana Dietetic Association met in Indianapolis. The program included:

"Changing to a Selective Menu"—Sister Wilma, St. Joseph's Hospital, Fort Wayne
"Decentralized Food Service"—Barbara Moore, Indiana University Medical Center, Indianapolis
"Centralized Food Service"—reports on Mealpack, Meal-Mobile, and pellet systems
"Management and Quality Food Production"—Margaret L. Mitchell, Vice-President, Food Production, The Stouffer Corporation, Cleveland
"How Well Can the Job Be Done?"—Harold S. Adams, Director, Sanitary Science Course, Indiana University Medical Center, Indianapolis
"Teaching Nutrition"—Dr. Ercel S. Eppright, Head, Department of Foods and Nutrition, Iowa State College, Ames
"Trends in Nursing Education"—Helen Weber, Assistant Professor, Nursing Education, Indiana University
"Nutrition for the Aging"—Dr. S. O. Waife, Editor, *American Journal of Clinical Nutrition*

Dr. Eppright represented the national Association at this meeting.

A joint committee of the Indiana Dietetic, Hospital, and Medical Associations and the Indiana Board of Health has completed a diet manual compiled specifically for the small hospital without the services of a quali-

New J&J "ASSEMBLE AND SAVE"
DISH-TRUCKS
delivered
KNOCKED DOWN
in compact cartons
READY TO ASSEMBLE
or supplied
FULLY ASSEMBLED
at slight additional cost
Heavy-duty quality—Lightweight price
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Net Selling Price $80.00
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Large, 2-Shelf Truck
Net Selling Price $108.00
Model 113
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Net Selling Price $134.00
Save up to 35% of the cost of a standard J & J welded unit with this highest-quality, stainless steel dish truck. It comes knocked down in an easy-to-handle carton. By following the illustrated instruction sheet anyone can assemble the dish truck quickly without special tools.
The big savings that result from lower fabrication costs and lower shipping and handling charges are your bonus for assembling this heavy-duty unit. The compact carton makes them convenient to store and they will always be available when needed.
Continuous rubber bumper at slight extra cost.
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Foods provide the B-complex vitamins and vitamin C which . . . as part of enzyme systems . . . activate chemical reactions in body cells . . . releasing energy . . . and synthesizing vital body compounds.

All of the needed vitamin C is easily supplied by the minimum amounts of fruits and vegetables suggested in *A Guide to Good Eating* . . . when selections are made to include the varieties suggested . . . fresh . . . frozen . . . or canned.

Thiamine, riboflavin and niacin are supplied by foods from all four groups while the minimum amounts of the foods suggested in the "Guide" do not supply the full Recommended Dietary Allowance for any of these B-complex vitamins . . . The allowances are easily met when additional amounts of these foods are eaten to satisfy calorie needs.

Vitamins B_6, vitamin B_{12}, folacin, pantothentic acid and biotin are other B-complex vitamins which must be supplied by food. Dietary allowances have not yet been recommended for these nutrients . . . considered to be adequately supplied by the variety of foods suggested in the "Guide".

All of these vitamins are water soluble. Some are partially destroyed by overcooking . . . others by sunlight. To preserve these nutrients . . . foods should be stored with maximum protection from sunlight and heat . . . and prepared with minimum water and heat.

When combined in well-prepared meals, foods selected from each of these four food groups can provide all needed B-complex vitamins and vitamin C . . . while satisfying the tastes, appetites and other nutrient needs of all members of the family . . . young and old.

USE DAILY

A GUIDE TO GOOD EATING

DAIRY FOODS
3 to 4 glasses milk—children
4 or more glasses—teenagers
2 or more glasses—adults
Cheese, ice cream and other milk-made foods can supply part of the milk

MEAT GROUP
2 or more servings
Meats, fish, poultry, eggs, or cheeses—with dry beans, peas, nuts as alternates

VEGETABLES AND FRUITS
4 or more servings
Include dark green or yellow vegetables, citrus fruit or tomatoes

BREADS AND CEREALS
4 or more servings
Enriched or whole-grain
Added milk improves nutritional values

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

Since 1915 . . . promoting better health through nutrition research and education

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fied dietitian. Copies are available for $1 each from Mrs. Kathryn Sheedy, 122 East 22nd Street, Indianapolis 2.

Michigan Dietetic Association. April 24 and 25 were the dates of the Michigan Dietetic Association meeting held at Boyne Falls. The program included:

"Administrative and Financial Control of the Department of Dietetics"—Richard L. Sejnost, Associate Director, Harper Hospital, Detroit

"Psychological Factors Influencing Food Reactions"—Robert Braun, M.D., Assistant Director, Out-Patient Department, Lafayette Clinic

"The Dietitian as a Consultant"—Mrs. Donald Nelson, Traverse City

"Can College Students Be Interested in Dietetics as a Career?"—Marqueta Huyck, Associate Professor of Home Economics, Wayne State University, Detroit

"Today's College Student"—Helen Lohr, Head of Home Economics, Central Michigan College, Mt. Pleasant

"An Administrator Faces Food Service Problems in a Small Hospital"—Ella K. Longley, R.N., Superintendent, Pauline Stearns Hospital, Ludington

"The Challenge to the Dietitian in a Small Hospital"—Mrs. Pauline Wood McFarland, Midland Hospital, Midland

"Experience of the Food Service Supervisor"—Isabel Zempel, Food Service Supervisor, Rogers City

"Experience of the Dietitian at a Camp for Diabetic Children"—Sarah I. Jencks, Staff Dietitian, Henry Ford Hospital, Detroit

This was the first meeting of the Michigan Association in the northern part of the state, and the location enabled a number of members to attend who have been unable previously to travel to the southern part of the state. There were 145 registrations, including 15 food service supervisors in the area who have completed the Food Service Supervisors Course at Michigan State University.

A highlight of the program was the reading of a resolution from the Michigan Diabetes Association expressing its recognition and appreciation of the cooperative effort and support of the Michigan Dietetic Association in furthering the work of the Diabetes Association.

Two scholarships were awarded to college seniors planning to take internships next year. Katherine Allington, who will intern at the VA Center, Los Angeles, received the scholarship of the Michigan Dietetic Association, and Rachel Donnan, who plans to intern at the University of California Medical Center, San Francisco, was named recipient of the Michigan DuBois Foundation Scholarship.

Minnesota Dietetic Association. A two-day Institute on Administrative Dietetics will be held June 18 and 19 at the University of Minnesota Center for Continuation Study, Minneapolis. Sponsor of the Institute will be the Food Administration Section of the Minnesota Dietetic Association. The Institute will cover the following topics: effective communication — oral and written; in-service education for food service personnel; the import of unionism on the management job; merchandising institutional food; and control of preparation costs, with specific attention to labor expense.

New Jersey Dietetic Association. The *North Jersey Dietetic Association* met on April 29 in Englewood to hear a panel discussion of "Are We Selling Dietetics Short?"

The April meeting of the *Middle Jersey Dietetic Association* in New Brunswick featured a talk on "Recent Trends in Control of Diabetes" by the Coordinator of the Diabetes Control Program, New Jersey Department of Health.

In May, the *Southern Jersey Dietetic Association* heard an address on "Produce Inspection" by Malcolm Edmonston, Agricultural Marketing Division, USDA.

New York State Dietetic Association. The Annual Mary Swartz Rose Memorial Lecture in New York City

Attractive mealtime settings
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The one dinnerware that gives you all these advantages:

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WARM foods to serving temperature

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. . . and all in ONE COMPACT UNIT. Our new Tri-Veyor will cut costs in food serving operations by utilizing the facilities of the central or main kitchen during many of the now less busy hours.

Easy to operate—no extra equipment required. The special built-in heat-active storage cell works even during transportation. Food stays hot and kitchen fresh, ready to serve UP TO 4 HOURS. Tri-Veyor has a standard 12″ x 20″ opening and uses Seco-Ware pans in depths up to 6″ with covers. Over-all size is 14″ High x 24½″ Long x 15½″ Wide. Use as a single unit or in combinations. Tri-Veyor comes in all Stainless Steel or Hammertone Grey finish with Stainless Steel top.

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ALL SIZES

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was given on April 20. Feature speaker of the evening was Robert R. Williams, Sc.D., Chairman, Committee on Cereals, Food and Nutrition Board, and Consultant, U. S. Public Health Service. His topic was "Can Classical Deficiency Diseases Be Eradicated?" The *Greater New York Dietetic Association* sponsors this event annually.

South Carolina Dietetic Association. A joint meeting of the South Carolina Dietetic Association and the South Carolina League for Nursing was held March 17. The purpose of the meeting was to discuss progress or changes in teaching nutrition to student nurses since the workshop held by these groups in September 1957. Anne Molleson, Dietitian, University of North Carolina School of Nursing, spoke on "Nutrition Education in the Basic Curriculum for Student Nurses."

Association Activities

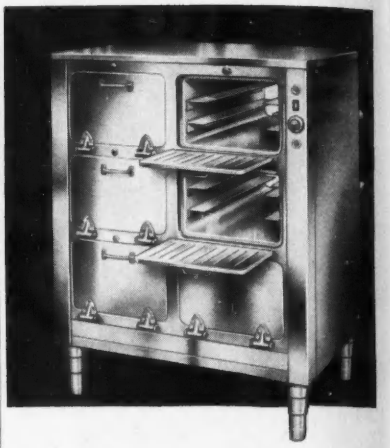
Revised Constitution Passed. A special meeting of A.D.A. members was called on April 8 in Chicago for the purpose of adopting the proposed revised Constitution for the Association. Leila Colwell, Elizabeth H. Tuft, and Vivian L. Laird, the lawful attorneys and proxies, reported a total of 4,765 proxies returned; of this number, 253 were unsigned and, therefore, were not counted. Four thousand nine votes were cast for the adoption of the Constitution, and 503 votes were cast against.

LeVelle Wood, A.D.A. President and presiding officer, indicated that "by the vote of the membership the proposed Constitution is now adopted in accordance with 'Article XIII—Amendments' of the present A.D.A. Constitution." Margaret L. Ross, Ph.D., was present and served in her capacity as A.D.A. Secretary.

State Representative. Bessie Brooks West was the A.D.A. representative at the North Dakota Dietetic Association meeting, April 24, in Minot.

"View from the Mountain." From November 1, 1958, through March 31, 1959, "View from the Mountain" had been shown 993 times to a cumulative audience of 41,700. This is a report from Modern Talking Picture Service and does not reflect the showings scheduled by members of dietetic associations. A total of sixty-two prints have been purchased by local and state dietetic associations, health departments, and colleges.

Rehabilitation. Ruth A. Reams, VA Hospital, Brooklyn, is serving as the Chairman of the A.D.A. representatives on the Joint A.H.E.A.-A.D.A. Committee on Rehabilitation of the Physically Handicapped. The Commit-



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Equally important is Thermotainer's amazing ability to keep hot foods in perfect condition for serving. Because Thermotainer has exclusive "channel heat" to maintain uniform compartment temperature and humidity, food is kept hot and delicious for hours. Uses no steam or hot water. Even the most delicate foods never become soggy, dried out, or lose their flavor.

These and all the other exclusive Thermotainer features including the original pass-through design help you double kitchen output without doubling food preparation equipment.

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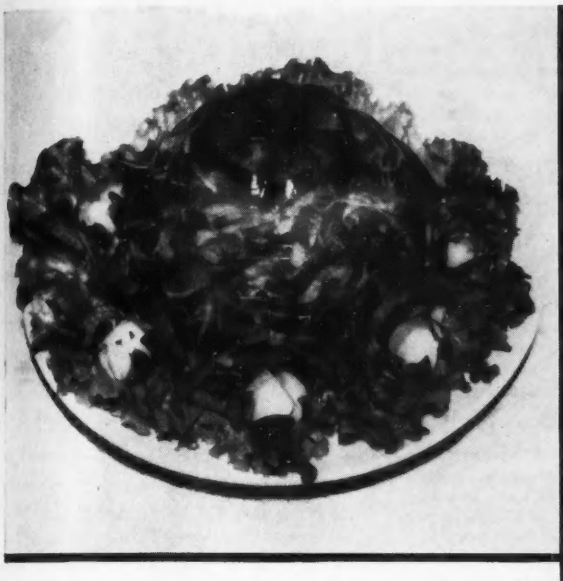
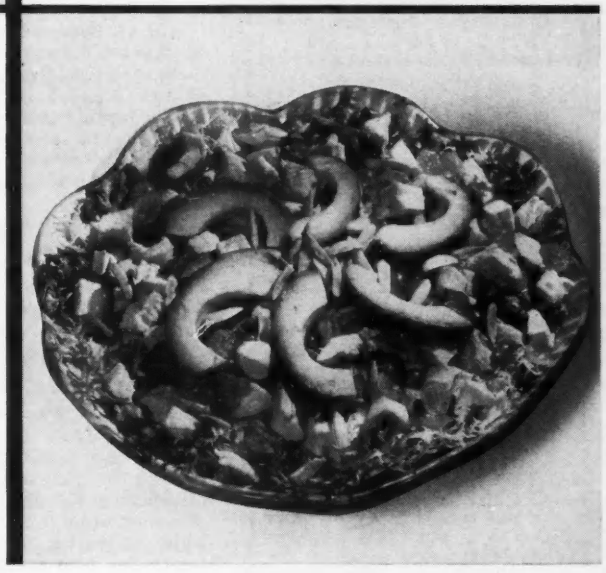


these *Cool* dishes are top-notch summer items!



. . . because they're easy and economical to prepare

. . . because they're rich, nourishing and delicious

. . . because they perk up heat-worn appetites

When those "dog days" of summer are ruining appetites, nothing is so instantly appealing, so brightly refreshing as these cool Custom chicken classics—chicken salad and chicken aspic.

These two sure-fire summer favorites are especially popular when you make them the Custom way—with pure Custom Chicken Base—because they really have loads of flavor.

The secrets are simple. First, be sure when you cook your chickens, that Custom Chicken Base has been added to the cooking water. This actually puts flavor into the chicken, restoring flavor that has been cooked out.

Second, in making salad, use a touch of Custom Chicken Base in the mayonnaise (approximately one heaping teaspoonful to a cup of dressing). The tremendous difference in chicken salad flavor will surprise you.

And third, use Custom Chicken Base in making your aspic. It's always rich and delicious—never dull or flat tasting.

Honestly, with Custom Chicken Base your hot-weather menu takes on new vigor!

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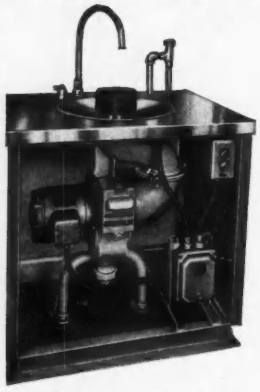
GRUENDLER FOOD WASTE DISPOSER



Model D201, shown above, is especially suited for custom installation where paneling must match existing assembly. This model is one of the moderately priced series (D200) which disposes of food scraps from 200 to 500 settings per hour, depending on power used.

Other automatic disposers range from large-capacity sizes, able to handle waste from 500 to 2,000 meals per setting, to the economy models for small kitchen facilities.

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tee meets bimonthly in New York City. It is through the effort of this Committee that conferences on rehabilitation have been scheduled during the A.D.A. Annual Meeting and the A.H.E.A. Annual Convention.

At the last Committee meeting, it was reported that the Home Management Department at the University of Connecticut is compiling a bibliography concerning rehabilitation.

American Board of Nutrition. The American Board of Nutrition met in Atlantic City on April 14. Ercel S. Eppright, Ph.D., is a member of the Board. She reports that the following officers have been newly elected: W. H. Sebrell, Jr., M.D., President; Robert E. Olson, M.D., Ph.D., Vice-President; and Robert E. Shank, M.D., Secretary-Treasurer.

An announcement of examinations will be made as soon as dates are determined. A total of 135 have now been certified for membership to this organization.

A.D.A. Representatives. Elizabeth M. Agnew, New York State Department of Health Regional Office, White Plains, New York, served as our official representative at the 1959 Annual Meeting and Workshop of the *United States Committee for UNICEF*, April 30 to May 1, in New York City.

The Second *National Conference on World Health* was held May 7 to 9, in Washington, D. C. Our official representative was Mary McInerney, New York State Department of Health, Albany. Miss McInerney is our new representative on the Policy Committee of the National Citizens Committee for WHO.

Muriel G. Wagner, The Merrill-Palmer School, Detroit, was the A.D.A. representative at the official opening of the seventeenth district headquarters of the *Food and Drug Administration* in Detroit on May 1-4. This celebration afforded an opportunity for both professional and lay people to become more familiar with the services of this federal agency in protecting our food supply. Adelia M. Beeuwkes served as a member of the planning committee for the district headquarters opening.

A.M.A.-Paramedical Committee. A.D.A. was represented at a round table discussion of paramedical groups called by the American Medical Association in Chicago on May 16. The A.M.A. Joint Committee to Study Paramedical Areas in Relation to Medicine was created by the A.M.A. Board of Trustees to "consider how physician leadership can best be activated in relationships with professional and technical personnel closely related to medicine . . ." and further "to study the matter of liaison at the professional and technical level leading to the above objective."

Catholic Hospital Association. Le-

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AMERICAN DIETETIC ASSOCIATION,
Los Angeles,
Statler Hotel and
Shrine Auditorium,
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Instant Maxwell House has *uniformity of flavor*. Day in, day out, you can serve the same delicious cup of coffee!

Instant Maxwell House offers *substantial economy*. Gives 10% greater yield. No coffee is wasted in grounds.

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We're interested in a free one-day trial supply of Instant Maxwell House H&R Coffee and a demonstration. I understand we are under no obligation to buy.

Name..... Title.....

Organization.....

Address.....

City..... State.....

Equipment used (check one) ☐ Urn ☐ Glassmaker
Number Cups Served Per Day .....

Velle Wood will participate in a panel discussion, "Management Training Pays Dividends" at the Catholic Hospital Association's 44th Annual Convention in St. Louis, June 1 to 4. The topic assigned Miss Wood was "getting the worker to want to work."

Civil Defense. As part of the nation's sixth Annual Civil Defense Operation Alert on April 17, Chicago, along with other cities, staged a mock attack. Thousands of Civil Defense workers were ready to move into action at the sound of the city's air raid sirens. The attack was fictitious, but the problems of mass evacuation and feeding and caring for survivors were just as they would have been had it been a real attack.

In connection with the exercises, Civil Defense leaders of Cook County and Illinois participated in ceremonies dedicating the radiation fallout shelter in the sub-basement of the Lake Shore Club of Chicago. The shelter is stocked with $5000 worth of food and medical supplies. It has been necessary to change the intake of the ventilating system and set up emergency lighting to adapt this area 18 ft. underground to a shelter. It is unique since the majority of underground passages within 2½ mi. of Lake Michigan would not lend themselves to such safety if a bomb were to be dropped into the Lake.

"It's all right, they're just discussing whether you should have one or two lumps in your Continental Coffee!"

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AMERICA'S LEADING COFFEE
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News of Products and Services

A new line of stainless steel dish trucks, called "Assemble and Save," is being offered by *Jarvis & Jarvis, Inc.* The units are shipped "knocked down," and the customer assembles them himself at a savings claimed to run to 35 per cent over standard welded units. There are three models in the line: a small, two-shelf, Model 172; a large two-shelf, Model 112; and a large three-shelf, Model 113. All models are available with continuous rubber bumpers if desired.

Market Forge Company has redesigned the "Poly-Dolly" twin-bucket carrier in its Green Label line of floor washing equipment. Two adjustable platforms accommodate both round and oval buckets from 16- to 44-qt. capacity for wash and rinse. The Poly-Dolly has two ball-bearing swivel casters with a choice of 2- or 3-in. wheels. Two stationary rear wheels provide stability when wringing mops.

From the *Louisiana Sweet Potato Advertising and Development Commission* come two new sets of quantity recipes. One contains fourteen, 4 by 6 in. cards which primarily emphasize vegetable uses for yams. A "tips on cooking" card is also included. The gamut in this set ranges from French fried yams to Louisiana yam scrapple, yam-stuffed onions, and golden yam coffee cake. Recipes are scaled for fifty servings. The second set of cards, size 8 by 5¼ in., are concerned with recipes for baking and include pies, cakes, muffins, doughnuts, and bread. Yield for these eight recipes would be approximately sixty servings.

Lakeside Manufacturing, Inc., has announced a heavy-duty, stainless steel dish and tray storage truck built to carry 500 lb. dishes or trays. Only 32 in. high, it slides under average counters and may be loaded or unloaded from one side. Ball-bearing, 8-in. swivel casters assure easy handling. Accessories available for use with this truck include a close-fitting, hinged cover, removable front panel for easy cleaning, and a bumper guard.

General Mills has prepared a set of recipe cards for use with its new Griddle Mix varieties: egg waffle mix, egg griddle cake mix, and pancake mix.

A new portable, stainless steel food carrier (Model 1X10), together with a matching four-pan inset assembly (Model 10X4), is now available from *Vacuum Can Company*. These new "AerVoid" models were designed and engineered to meet the sanitary construction requirements of the U. S. Public Health Service Ordinances and Codes.

A hospital tray service line has been announced by *Legion Utensils Co., Inc.* The line, made of stainless steel, includes: tray, Dri-hot plate unit,

Pream or Cream?

Once it's in the coffee, most folks can't tell!

That's because PREAM is made entirely of fresh sweet cream, blended with other milk products in convenient *instant* form!

Of course, there are lots of important ways you *can* tell the difference. PREAM is the one you don't have to keep in the refrigerator.

PREAM is the one that *stays* fresh . . . never wastes money by spoiling.

Try individual PREAM packets for extra economy, savings and safety. They're easy to store. They completely eliminate washing, sterilizing (and breakage) of pitchers and creamers. They add that creamy zest and taste folks always appreciate.

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sugar bowl, creamer, sundae cup, vacuum bowl with nesting-style or dome cover, and beverage server.

Victory Metal Manufacturing Corporation's 1959 V-Line models are especially designed for bulk loading, storage, and serving. These refrigerators may be ordered for normal temperature and freezer, freezers, or warming cabinets. Interiors are adapted for pull-out drawers, shelves, meat rails, fractional pans, supports, and portable food racks. Portable food racks are self-locking into the refrigerator and self-locking on to dollies. Finishes available include: stainless steel, stainless steel and aluminum, baked white enamel, porcelain, or any combination thereof.

A low-cost dispenser for iced tea, iced coffee, lemonade, or other noncarbonated beverages is being introduced by *Helmcold Dispensers, Inc., Division of Helmco-Lacy*. No refrigeration or agitation is needed. The unit is especially suitable for the quick serving of drinks that require ice. It is available in three models: a single unit with 3¼-gal. capacity; twin units with two 3¼-gal. containers; and a 2¼-gal. capacity single unit.

Also new with *Helmco-Lacy* is the Olympian automatic electric coffeemaker, which features push-button brewing to produce 12 cups of coffee every 2½ min.

L. L. Antle & Co. Inc., has announced that its Anco shredded chicken is now government inspected. This product features a solid pack of tender, broiler neck meat, cooked and ready to serve. It contains no skin or bones and is recommended for chicken salad and other dishes requiring chopped chicken meat.

A dual-temperature refrigerator, combining normal cold and freezing temperatures in one unit, is now being produced by *Herrick Refrigerator Company*. Standard, remote, and pass-through models are available in three sizes.

Koch Refrigerators, Inc., introduced at the National Restaurant Association convention in May a new, patented ice-maker with no moving parts in the ice-making zone, no gear boxes, scrapers, or crushers, and nothing that can wear out or require adjustment. The entire ice-making zone is inherently self-cleaning, and all scale-forming elements and excess water are rejected with each harvest cycle. The first size available in this Koch Series 900 Icemakers produces up to 200 lb. crystal clear, hard ice in irregular nuggets, averaging approximately 1 in. in diameter and from ¼ to 5/16 in. in thickness. The ice is free flowing; pieces do not stick together and are easily scooped up.

Another premiere at the National Restaurant show was the "Junior-Automatic" low-priced, motor-driven hamburger-forming machine introduced by *Automatic Food Shaping Co., Inc.* It can form 100 patties in 5 min. and can shape patties from 1½ to 5½ oz. in either 3-, 3½-, or 4-in. diameter molds. Different weights can be produced without extra plates for the machine.

Abbott Laboratories has published another booklet of recipes using Sucaryl. This one includes beverages; breads; cakes and cookies; baked, frozen, and chilled desserts; dessert sauces and toppings; pies and tarts; salads and dressing; meat sauces and accompaniments; preserved foods; and vegetables.

A new stainless steel ice tea urn, specially designed for users of iced tea, has been developed by *Continental Coffee Company*. The urn, available in either 5- or 10-gal. sizes, contains a stainless steel basket which raises or lowers tea bags from floating or sinking to the bottom. It features a glass gauge that shows the level of iced tea at all times, and a sloping bottom that allows complete drainage. Both the urn itself and the Wyott faucet are designed for easy cleaning.

General Foods has developed new easy-to-open envelopes for Instant Sanka and Instant Maxwell House. Designed especially for the volume feeding trade, the new envelopes are notched and embody a tear string which cleanly rips off the top of the package for easy pouring. The new envelopes are now available nationally.

Mead Johnson & Company has introduced a new, tasteless and odorless form of three B vitamins in its solu-

Handbook of Diet Therapy

New Revision

The third edition of the ***Handbook of Diet Therapy*** was released on May 15 for THE AMERICAN DIETETIC ASSOCIATION by the University of Chicago Press.

This source book, originated in 1946 and revised in 1952, has been widely accepted as the authoritative guide for everyone who plans diets to meet special health requirements and for those who offer guidance in meeting nutritional problems. It is compiled by Dorothea F. Turner, Chief Medical Nutritionist in the Department of Medicine at the University of Chicago and Editor of the JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION.

The new third edition emphasizes optimal nutrition as the basis of intelligent diet therapy. It offers menu plans and descriptions of therapeutic diets based on the latest results of food and nutrition research. New tables of food composition for more than two hundred items include, among other things, saturated and unsaturated fatty acids and essential amino acids.

Heightening its usefulness, the ***Handbook*** includes new chapters on diet during pregnancy, adolescence, and old age.

208 Pages **Third Edition** **$5.00**

Order from

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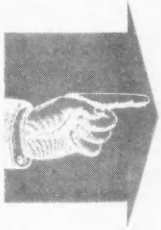

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ble vitamin tablets, Poly-Vi-Sol and Deca-Vi-Sol tablets. The improved ingredients are thiamine mononitrate, riboflavin, and niacinamide. According to the company, these products are the first to overcome the problem of patient resistance to the natural pungent odor and after-taste of thiamine, riboflavin, and niacin. Tests have shown that the active vitamin in the tasteless form is as biologically available as is the regular, crystalline form.

Pfaelzer Brothers has added liver slices to its line of portion-ready frozen meats. Made from top quality steer livers which have been skinned and de-veined, the slices are available in either 3- or 4-oz. portions. They are layer-packed in 10-lb. cartons. They may be cooked from the frozen state.

A new dish box of molded, unbreakable polyethylene is being marketed by *Bolta Products Division* of *The General Tire & Rubber Company*. It will hold three "Steril-Sil" washing cylinders, is nontoxic, and impervious to acids, fats, oils, and greases. It may be used in mechanical dishwashers and can be sterilized. Molded construction makes cleaning easy, as there are no seams to catch or hold soil. It can be stacked or nested, is easily carried or can be used on portable carts. Two colors are available, white and gray.

Test Laboratories announces successful spray-drying of tomatoes, producing a powdered tomato concentrate for use in soups, catsups, purées, or to form reconstituted tomato juice. Assays show food values are retained almost intact, with vitamin A and ascorbic acid remaining high even after long storage. Color, flavor, and appearance remain about the same as those in fresh tomatoes.

A new 100 per cent fat shortening, "Glodo," has been developed by *Procter & Gamble's* Research Bakery for use in both sweet dough and as roll-in fat for all sweet yeast-raised products. When used for roll-in, the shortening spreads evenly between the layers, without tearing the dough. Glodo is golden in color with a bland flavor and clean odor. An eight-page folder with recipes for Danish dough, sweet dough, several fillings, and a fondant icing prepared from Glodo is available.

The Mark III, a new Radarange oven, is offered by *Raytheon Manufacturing Company* at a 13 per cent lower price tag. Simplified electronic equipment resulted in the lower cost and promises lower maintenance costs. Improved design insures an even more uniform cooking pattern within the food in the oven, which measures 22 in. deep by 20 in. wide by 12 in. high. Two alternating current magnetron tubes provide power. A sealed-in system of circulating liquid prevents overheating. The new model is manufactured in six colors: yellow, green, pink, coppertone, black, or steel gray. Level-adjusting legs lift the range off the floor for easier cleaning.

Syracuse China Corporation has added a new pattern called "Festival" to its Hospitality line. Graceful brush strokes in soft green and brown are used to form the border on a white background. The ware is said to withstand constant usage in large institutions because of the hard glaze finish. It is also resistant to chipping and breaking. The new pattern will be one of several open stock patterns in the Hospitality line.

A new portable electric ice crusher called "Snoflake," has been introduced by *Adams-Pelouze Co.* Underwriters Laboratories has approved the 4¼-lb. unit. Whirling, retractable arms crack the ice into even sized pieces and deliver into a tray below. The tray is designed to help keep the ice from melting and holds 1 qt. cracked ice. The crusher is turquoise, the tray white. The unit operates on 110 volt, 60 cycle alternating current, with self-lubricating bearings.

Available through the Institution and International Export Divisions of *American Home Foods*, mashed banana is being marketed in canned form under the brand name, "Chiquita." The fruit is grown on United Fruit Company plantations and aseptically processed in the tropics. Uniformity in flavor, quality, color, and consistency is guaranteed. The product is suggested for use in baked goods, ice creams, sherbets, candies, pies, puddings, and desserts.

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